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TRANSACTIONS

OF THE

FORTY-FOURTH SESSION

OF THE

HOMŒOPATHIC MEDICAL SOCIETY

OF THE

STATE OF PENNSYLVANIA

Held at the Homœopathic Hospital, Pittsburg
September, 17, 18 and 19, 1907

LANCASTER, PA.
THE EXAMINER PRINTING HOUSE
1907

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do D. P. MADDUX, M. D.,.....Philadelphia.

To the Homœopathic Medical Society of the State of Pennsylvania:

Your Committee on Publication herewith presents the Transactions of the Forty-fourth Session of the Society, held at Pittsburg. Three papers which were read at the meeting were not turned over to the Committee, and all efforts to obtain them from their authors for publication were unavailing. Through the dilatoriness of the printer the Transactions will reach the members nearly a month later than usual.

E. M. GRAMM, M. D.,
ELLA D. GOFF, M. D.,
G. B. MORELAND, M. D.

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TRANSACTIONS

OF THE

FORTY-FOURTH SESSION

OF THE

Homœopathic Medical Society

OF THE

STATE OF PENNSYLVANIA

Held at the Homœopathic Hospital, Pittsburg,

September 17, 18 *and* 19, 1907.

The President, John J. Tuller, M. D., called the meeting to order on the morning of September 17th, 1907.

J. H. McClelland, M. D., delivered the following

INTRODUCTION.

Mr. President and Members of the State Society:—It affords me very great pleasure to present to you one who will speak a word of welcome to us and who is well qualified for that delightful task. He is the head of this municipality, which we hope will soon be a greater one. We delight to call him "Your Honor," and I can assure you he deserves that term in every sense of the word. Again I say I take great pleasure in presenting to you the Honorable George W. Guthrie, Mayor of the city of Pittsburg.

Hon. George W. Guthrie thereupon delivered the following

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ADDRESS OF WELCOME.

Mr. President and Members of the Homoeopathic State Medical Society:

It affords me great pleasure to come here as the representative of our municipality to extend to you a hearty greeting and sincere wishes for the success of your meeting and for your own happiness and pleasure. I desire to say that in the slow evolution of municipal government we are becoming firmly impressed with the function of the city in the warfare against disease, a warfare to secure not only the safety of our property but also the safety of our health, of our lives. This warfare we now see can be carried on successfully; but, in order that it may have the full measure of success, the co-operation of every individual in the community is required, a co-operation which can only be secured when the constituted authorities of the municipality become thoroughly interested in it themselves. But we also recognize two other facts. The first is that the light of scientific investigaton, such as the members of this Society are peculiarly fitted to give and to which they have devoted their lives, is needed to blaze the way. And, the second is that the intelligent members of the community must be educated in the knowledge of preventive medicine. The education of the community is necessary because the city government can never rise above the intelligence of the people over whom it presides. The people must be taught how important these things are to them and their office-holders taught how the end in view can best be accomplished, and then move forward together along intelligent lines, awaking the hope that in the near future (it may not be near to you or me, but a few years are as nothing), these stains that disgrace us at present will be wiped away. For myself, I would like to say that during my administration there has been nothing that appealed to me more than the necessity of improving the bad sanitary conditions that now obtain. We are struggling to overcome the consequences of many years of indifference, struggling to free our city from the grasp of ignorance and I believe we are moving along lines that will give us great benefit and great relief; and, in doing so, we will not only make our city a pleasant one but a healthy one. We are at last on the verge of getting for our people pure water that

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will bring health to them. Feeling the necessity of co-operation along these lines, I again extend to you a hearty welcome; and I do it not only with a personal feeling of kindness, but I do it for the best interests of our city and wish you Godspeed in your great work. I thank you all.

DR. J. J. TULLER: I feel that we are to be congratulated in having the Mayor to open the meeting of our Society and welcome us to the city of Pittsburg. We will now have the pleasure of listening to another address of welcome by our mutual friend, Doctor Z. T. Miller.

Z. T. Miller, M. D., thereupon delivered the following

ADDRESS OF WELCOME.

I am persuaded that an address of welcome to the State Society by a citizen of Pittsburg is a work of supererogation. That you come here at some sacrifice of time, money, and convenience makes you worthy of such recognition, and while we most gladly extend it to you, we would have you bear in mind that Pittsburg is an Eldorado, a Kimberly, an Independence all in one. But diamonds and gold are dug from the ground. The medical treasures are here but unless you have brought your picks and shovels with you and wield them effectually you will go home as poor as you came. The return for your sacrifice will depend upon your own efforts. There are a few particular gems for which you are to make especial seach; where they are, what they are you will learn when the dirt begins to fly.

We do not expect you to work all the time. The doctors of Pittsburg are a fairly generous lot of misers; on occasions like this they forget their cunning, relax their grasp upon their people and their purses and bribe with fabulous sums of money, certain rotund, sleek gentlemen (whose business it is to make business for them) to disregard all rules of health in your behalf, so that you can, for another year, pursue your calling with a becoming consideration and sympathy for the poor devil who has been out the night before. We will permit your anticipations to shame the flightiest airship in its soaring, feeling quite confident that you will realize that when you strike the earth again you may need a doctor yourselves.

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Outside of politics, certain clubs and some other places, Pittsburg is a very moral place. We never had but one Mayor in jail when he was elected (that is not saying how many ought to have been there after they were elected). Barring the places named we feel a certain safety in offering the freedom of the town knowing that you will enjoy it as long as you behave yourselves.

We are compelled to admit that there are certain temptations just around the corner, but they are offset by a Christian mission which is just across the street. If you want to you can seesaw between them and keep your account square that way.

God wants to keep his eye on Pittsburg, and He does it when the clouds roll by, and that is the reason that no one from Pittsburg, that we know of, had anything to do with the furnishing of that monumental example of political and architectural integrity at Harrisburg, except one, who lives within a *stone's* throw of Pittsburg, over in Allegheny, even he has proved an alibi. So you see that you run no risk whatever in coming to us; in fact, I rather think you will go home with your spiritual strength renewed and God knows you need it.

We pickle onions, iron and men, and 57 other varieties. These specialties are not exceeded in output in this or any other world. We take a special pride in our pickled men, the brand being so choice that we have built a large Institute of learning for medical lore on one of the lots that stand on end, monument to their greatness, which you alone can appreciate.

I have mentioned Allegheny; I would not go over there if I were you. I voted to take her in out of the frost so that she might be warmed on the red hot bosom of Pittsburg, but I repudiate that softness now. They have a certain kind of tax receipt over there that to juggle makes people see jugs and bars.

With these timely warnings I again welcome you to the hospitality of any of the health destroying hostelries you may chance to be steered into. The love of a doctor is the only sure scintillating certainty in the universe; of this we give you more than you need; we can't help it, there is so much of it. This applies to the ladies also. If there has been anything said that should not have been said, or anything left unsaid that should have been said, I feel I can trust to the vivid brainstorming of the doctors who will correct the proofs. You are welcome.

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The President, J. J. Tuller, M. D., then delivered the:

ADDRESS OF THE PRESIDENT.

Fellow Members of the Homœopathic Medical Society of the State of Pennsylvania:

When at the last meeting of this Society, I was elected to the highest position it has to confer, its presidency, I little dreamed of the obligations that would be forced upon its officers and special committees before the expiration of my term of office. These obligations have been met and every man on whom the responsibility rested, stood firm at his post, with as true a patriotism as has ever been demonstrated. I am not unmindful of this honor; indeed I am most grateful; but I am equally not unmindful of the great responsibility that has been associated with the honor.

I desire right here to express my grateful appreciation of the labors of all the committees that have been associated with the preparation of the work to carry on this meeting. I thoroughly recognize the fact that men of strength and ability and position in the profession, must take control of these committees and it is frequently a very difficult matter for such men to give up their time to this character of work, but the true spirit of patriotism that has given every man associated with these committees the desire to perform his work and do his duty, has been the cause of any success that we may attain at this meeting.

I am most gratefully appreciative of the work that has been done by the two committees that at this time are probably the most important ones in this Society; because upon these two committees in a very great degree rests the future success of the Society itself and possibly a great deal of the future of homœopathy in this State. Let me acknowledge the labor of the Legislative Committee in the past year in its arduous struggle to maintain the integrity of homœopathy against the antagonism that has arisen throughout the State and nation, and I desire to commend this committee to the Society for special consideration. Secondly, I wish to congratulate the Society and compliment the Membership Committee on the work that it has done, for it has made a splendid effort to increase the membership of the State Society, a work that is so positively

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necessary in the struggle that is bound to come before us to sustain our professional position.

I wish below to suggest to the Society that these two committees be granted greater power and greater privileges in the conduct of their work. I wish also to commend the excellent work done in spite of many obstacles, by the delegates of the Homœopathic Medical Society of the State of Pennsylvania to the Interstate Committee of the American Institute of Homœopathy. And I here request that the Society should grant to these delegates, every privilege that will permit them to go into the detail of this work making their position before the Interstate Committee of the American Institute so strong and emphatic as to allow them to wield a powerful influence in the reorganization of that body.

It is my object in addressing you to-day, to lay before you in as brief and concise a form as possible, the results of my observation on points that are of the most vital interest, not only to this Society, but to every section of this great Commonwealth where homœopathy exists. In other words, I desire to take up and discuss before this body, the issues of the day as they present themselves as a powerful antagonizing force to the interests of homœopathy in this State, and if I go into a certain detail, in the discussion of these subjects, it is because my experience in the past winter as well as my knowledge of the national affairs of homœopathy have led me to recognize the dangerous position into which we as homœopaths have been thrust by the action, both local and national, of the dominant school of medicine.

As the representative of the homœopathic profession of this State, the State Society should stand out as the body that not only combines all the professional interests in the State, but rests as guardian over all these interests and over all societies of the State; should guard the public health; the medical educational interests of the State; should place itself in a position to act harmoniously with all other factors in opposing with force and energy all invasions by quacks and illegitimate practitioners of the healing art within the borders of the State. It should endorse and in every way assist the national government in its struggle to enforce the pure food laws and ally itself to those forces that are active within the State in this work. It should enforce its own recognition in State institutions and assist the local societies in every section

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of the State to enforce municipal recognition of the homœopathic profession. It should provide for the creation of a committee whose function it shall be to look into the question of representation in State institutions and which shall have power to bring the weight and strength of the State Society in aid of the smaller organizations throughout the State struggling for representation in the smaller municipal institutions. I say again, that it must not permit the dominant school of medicine to take the lead in creating by State aid such institutions as shall be especially adapted to the treatment of special forms of diseases. As per example: the establishment of colonies and institutions for the treatment of tuberculosis. As we exist in the minority, we must put forth the greater struggle to prove to the public generally, throughout this Commonwealth, that we are a united body, working for the interests of the people in establishing such means as will better the conditions of the health of this State. It is not for us to trail on behind any institution in this work, but to distinctly take the initiative.

Such work I realize cannot be done without the aid of men who will enthusiastically grasp the situation and determinedly drive the work in spite of all obstacles. It is needless to say that it cannot be done, for where a dozen men gather together with spirit, force and enthusiasm, putting their shoulders earnestly to the wheel, the limit of their possible accomplishments, cannot be calculated. If, however, they are working for self aggrandizement and not for the interest of their society, the State and the people, then we must expect failure, for such conditions invariably invite it. It is not the man who struggles for self interest, that accomplshes the good; it is therefore not the organization that struggles for self interest that accomplishes the good, for as men are individually, so they are collectively in an organized body. I am, however, thoroughly aware, that in order to accomplish such ends, the organization of the Society must be complete, and of this I wish to speak later.

Homœopathy is a specialty and is not a distinctive school of medicine in the general acceptance of the term. The State of Pennsylvania has legally recognized this fact by the charter that it has granted to the medical institution which represents this system; in permitting the Hahnemann Medical College of Philadelphia to confer a degree of medicine that is as active as any degree permitted to be given by any other chartered institution in the

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State, and added to this degree it permits the granting of a special degree of homœopathic medicine. It is, therefore, by virtue of its charter a regularly legalized school of medicine, that has the power to grant to its graduates, the privileges of practicing any form of medicine which is recognized by the State. It is then as strongly a regular school as is any other medical institution in this State and its graduates are regular practitioners of medicine with the special privilege of practicing their specialty, homœopathy.

The members of the homœopathic profession of the State of Pennsylvania are to be congratulated upon the results of the concentrated labor of the Legislative Committee of this Society through the past winter. There probably never has been as forcible a struggle on the part of the dominant school to overcome sectarianism in medicine as has been carried on this winter before the Legislature of this Commonwealth. The officers and committees of your Society have fought with strength, force and determination to preserve the integrity of the homœopathic school in this State.

To-day Pennsylvania stands alone of the great States of the Union in preserving the individuality of Homœopathy. To-day there is not a single State all over this great country, that does not look to Pennsylvania for leadership in the fight that has been and is destined to come, to protect the profession against the struggle for annihilation by the dominant school of medicine. It is a regrettable fact, that New York State with all its power and strength has fallen before the force of the old school and to-day stands with the legal recognition of Homœopathy, crushed out.

In an editorial in the New York Sun dated May 21st, 1907, written by a layman and expressing the view from the layman's standpoint, we find these words: "The act to regulate the practice of medicine, which has just become a law by the approval of Governor Hughes, makes two notable changes in the medical institutions of the State of New York. It strikes out of the New York statutes all recognition of the homœopathic school of medicine and it legalizes the practice of Osteopathy; in other words, it denotes legal extinction of the Homœopaths and the triumph of the Osteopaths in their long struggle for recognition by the Legislature."

With this state of affairs in New York and most of the rest of the States of the Union, leaving not more than five or six of the different States supporting the integrity of the homœopathic pro-

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fession, with Pennsylvania in the lead as the most powerful of those remaining, it falls to the lot of the profession of this State to protect itself against this movement for annihilation and to lay the plans to save the profession of the country. Its obligation is still greater; it is to-day by virtue of its strength and numbers forced into the position looking to the re-establishment of the integrity of the homœopathic school all over the nation. It is our positive obligation to put our mental and physical forces into harmonious action for the carrying out of the work.

We must then commence systematically to establish harmony within the State and we must rouse every member of the homœopathic profession to realize that upon him rests a positive obligation to do all in his power to create and maintan an organization, the center of which must be the Homœopathic Medical Society of the State of Pennsylvania. The internal organization of this Society must be a perfectly complete and exact piece of mechanism. We must establish a system that will be perfectly and harmoniously active in the most remote districts of the State. The officers of the Society must be elected upon their actual merit and let him who has earned the honor only, receive it. Its committees must be appointed with a view to obtaining the highest standard of capacity to organize and maintain organization and upon the ground of force and energy and activity. Men must be selected, who are enthusiastic supporters of the Society that they represent; who are willing to make the sacrifice to plunge into the work, regardless of criticism, regardless of censure, regardless of loss, financial or physical, and above all an internal spirit of harmony must exist between these several committees.

The Committee on Membership and Organization must be a strong, able body. Its work will not and cannot be complete until every practicing homœopathic physician in the State of Pennsylvania shall have been enrolled upon the list of members of this Society. It must have the right to go into remote districts of the State and organize the profession into groups of men who will come forward and give their earnest support to the Homœopathic Medical Society of the State of Pennsylvania. The State Society must reimburse them for any financial outlay on their part in the carrying on of this work. The strength and force of this Society depends, in a great measure, upon its membership, and once the members

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have been gathered together, the committee must see that the individual sections throughout the State, that are represented in this Society, shall be organized into a strong substantial unit, and they must devise the ways and means of protecting these different elements in the Society and the keeping of them together as an organized body.

The Legislative Committee should be empowered, first, to organize the State for Legislative purposes; second, to meet all emergencies in legislative work, to go forth in an instant's notice and have full power to represent the interests of the Society, based upon the policy that this Society shall adopt.

The provisions for its expenditures should be sufficiently liberal that they shall not be financially embarrassed by any sacrifice that they make. They should have as well, the power to draft into service at a moment's notice, any member of this Society who can be of service to this Committee in an emergency. It must prepare a fixed system of organization that its arm shall reach out into every section of this State either great or small. The details of this system must be worked out by the committee.

It should have the power to create an Auxiliary Committee that is dependent upon the Legislative Committee for instruction, consisting of a man selected in every county seat in every county in this State, to undertake the political organization of this Society throughout the State, that the profession shall be a political professional unit, when the time arrives for the battle or self-preservation to occur. The Legislative Committee should be empowered to draft instructions to the various members of its Auxiliary Committee for the purpose of obtaining the best mode of procedure and also to draft blank forms to be filled in as regular reports by the various members of the Auxiliary Committee in the different sections of the State, to be sent in at certain intervals to the Legislative Committee, that it may keep in perfect touch with the movements of the profession as well as exert its control and direct this work throughout the entire State. The members of the Auxiliary Committee must be men selected upon their individual merit as to capacity, energy and enthusiasm in the cause.

Upon reports of sluggishness, inactivity or lack of enthusiasm on the part of the members of our profession in any section of the State, the Legislative Committee should have power to send mission-

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aries to this field, to re-establish the professional support to this Society, and it must be given the right to bear the expense incurred by such work and be re-imbursed from the treasury of this Society.

The time is ripe for us to come out of that state of lethargy into which we have dropped back at ease and permitted the forces of the dominant school of medicine to rise and lash us out of existence. If we stand forth for the battle, it must be with all the strength that we have and we must be prepared not only to meet from the defensive standpoint an attack, but to take the offensive when it shall be to our advantage to do so.

Certain it is, that under the medical laws of the State now existing we can receive justice. But any system that tends to force by examinations professional control, that does not give us absolute individuality or actual equal representation, regardless of numerical strength, means the annihilation of the homœopathic school and its institutions. This great special system of medicine that has fought its way against every opposition and every antagonism, against every opposing force for more than one hundred years, to a point of legal recognition throughout this entire nation, cannot and must not be beaten out of existence by any subterfuge whatsoever upon the part of any dominant factor in medicine.

The present system of examinations we are compelled to recognize as most primitive. There is something radically wrong in a system that will permit a State to legally charter its institutions of medical learning, granting in these charters the privilege to their graduates passing out to practice medicine at any point within the borders of this State, and then declare them unfit to carry on the profession for which they have been specially educated and specially privileged, until they have passed a second board of examiners. When we come to this point it is indeed necessary that we stand on the ground of positive equalization of all schools by State government control of the standards of its colleges and then permit those institutions which have been legally privileged to grant these men the right to practice to be the last court of decision as to whether they shall practice or not. The system by which we place a monitor over the student and not over the institution that creates him is radically wrong.

If we are to create and support a system that will deal justice to everybody, and if we are to maintain our individual rights as

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men practicing the special branch, Homœopathy, we must create and maintain an internal organization within the Homœopathic Medical Society of the State of Pennsylvania that will extend its force and strength to every corner of this State and re-establish the strongest principle of harmony and enthusiasm within the entire profession. At the same time we must as a school endorse and support the highest standards of educational qualification.

The recent law adopted within the State of New York has degraded every school of medicine by its obliteration of examinations on the subjects of Materia Medica, Therapeutics and Practice. It has thereby degenerated its standards of medicine, as well as dealt injustice not only to the laity because of the removal of the obligation to perfection on the part of teachers and students of the only subjects in the question of medical education that they have the least particle of interest in, but it also has degenerated the profession because it has stricken out that great superstructure that is so necessary to his habitation in the profession. It has left him then nothing but the foundation. Again it has left the selection of the men who shall take the positions of the passing of judgment upon the great medical institutions, to a body of men irrespective of legal requirements. It is perfectly known by men of intelligence in the profession of medicine, that such a system can under no circumstances be permitted to exist. It means general disintegration and ultimate degradation to every school of medicine.

Whether it is deliberately or cold-bloodedly intentional on the part of the old school to force the destruction of Homœpathy through legislative means or not, makes no difference, the work that is going on all over the country, not only tends toward this end, but is destined to bring it about ultimately. I cannot lay too much stress upon the fact that such bills as were presented before the Legislature of the State of Pennsylvania at its last session and carried in the State of New York are not only destructive to Homœopathy as an institution, but must of necessity result in the destruction of those institutions that have been built up all over the country under homœopathic regime.

First the colleges and then the hospitals, for where a law exists that annihilates the individual that supports these institutions, the institution must ultimately fall before it. And as this exists as a fact, the work that has now been commenced by the old school, in-

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tentionally or otherwise, is destined to aim a sharp blow at the individual practitioner himself.

At the last meeting of the American Medical Association held in Atlantic City in the month of June of this year, the movement was started to establish legislation all over the country that would prohibit the individual practitioner from dispensing his own medicine. It takes little reasoning to convince one that this would be distinctly a blow at the individual homœopathic practitioner. It would force him to write prescriptions for all his drugs and to be at the mercy of the usual druggist; depending upon such a druggist for the preparation of all his remedies and compelling physicians to trust to the honesty of the druggist. Again, the druggist follows the instructions laid down by the United States Pharmacopœia, which is the established work of drug preparation formulated by the old school and adopted by that institution, and is at distinct variance with the rules laid down by the Homœopathic Pharmacopœia, adopted by the American Institute of Homœopathy. One then can readily see that legislation that would tend to force the homœopathic school to bow to the general pharmacist, by the forcing of such a practitioner to write prescriptions for his medicine instead of granting him the right to dispense his own remedies, would work not only a severe hardship upon the medical man, but a great injustice upon the community at large, which is dependent upon the homœopathic school of medicine for the care of its sick.

Again, I would briefly call your attention to the fact that it was this measure adopted and forced into legislation by the old school that drove Hahnemann out of Germany. Under such laws there would be nothing left but the driving of the homœopathic school of medicine into the ranks of the old school. The first law is, as I have said, aimed at the institutions, the second would be aimed at the individual.

Again, while we have been quietly lying asleep, resting in the confidence of the belief that Homœopathy is a deep-rooted law and part of the organic laws of nature, and, therefore, protected by the Divinity, the old school has forced the National Congress to pass laws that recognize absolutely no remedies as legal medicaments except those that are prescribed and provided for by the United States Pharmacopœia, formulated by the old school. This means

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that all homœopathic remedies which cannot be in the nature of things brought under the provision of the United States Pharmacopœia, must be placed in the category of quack remedies and patent medicines.

We, therefore, have to-day an obligation that has settled upon the Homœopathic Medical Society of the State of Pennsylvania, because of its position in the affairs of the homœopathic school, the strongest obligation that has ever rested upon any State society in any part of the country before. The American Institute of Homœopathy has not taken an active part in guarding the national laws for our protection, and we have, therefore, the added obligation to press forward into the American Institute with a firm force, that will compel that organization to rouse to the protection of the homœopathic profession before the National Legislature, that the United States Government, as well as individual State governments, shall not legislate discriminately against us.

With these facts in view, it is my desire to, as forcibly as possible, impress upon you the necessity of not only immediate, but concerted, action, and of the putting forth of a determined effort to create as great a spirit of harmony as possible, throughout the entire homœopathic profession of this State. But while we are fighting for the rights and privileges of the homœopathic physician and for the protection and preservation of homœopathic institutions, the greatest diplomacy must be empolyed that we commit no act and make no assertion that can be construed as antagonistic to the preservation and advancement both of higher medical education and of investigations of medical science. That it would not for one instant act as an inhibitory element to such advancement, and it would join every force and work strenuously to the end of both, increasing medical facilities and advancing medical knowledge.. But for the good of the people and for the benefit of the sick, the institution of Homœopathy, wherever it exists, shall be and must be preserved, and this can only be done by the preservation of its individuality as a system of medicine.

On motion the address of the president was referred to a committee consisting of Drs. W. A. Seibert, O. S. Haines and W. W. Blair, who presented the

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REPORT OF THE COMMITTEE ON PRESIDENT'S ADDRESS.

Your committee appointed to report upon the President's excellent address would respectfully suggest the adoption of the following resolutions pursuant to his suggestions:

1. That this society grant our delegates to the Interstate Committee of the American Institute of Homœopathy every privilege that they consider necessary to permit them to go into every detail of this work.

2. That the Legislative Committee be empowered to organize the State for legislative purposes; to have full power to represent the interests of the society, based upon the policy that this society shall adopt; to have the power to draft into service any member of this society who can be of service to this committee in an emergency; to create an auxiliary committee dependent upon the Legislative Committee for instructions, consisting of a man selected in every county seat in this State; to draft instructions to the members of its auxiliary committee, and to draft blank forms to be filled in as regular reports from the various members of the auxiliary committee in the different sections of the State, to be sent in at certain intervals to the Legislative Committee; to send missionaries into any section of the State for the correction of sluggishness, inactivity or lack of enthusiasm, and that this committee be reimbursed from the treasury of this society for expenses incurred by such work.

3. That the Membership Committee have the right to go into remote districts of the State and organize societies, and that this committee be reimbursed for the financial outlay in carrying on of this work.

4. That this society appoint a committee to look into the question of representation in State institutions; to aid smaller organizations throughout the State struggling for representation in the smaller municipal institutions, and to not permit the dominant school of medicine to take the lead in creating by State aid such institutions as shall be especially adapted to the treatment of tuberculosis and other special forms of disease.

5. That we approve of the sentiments that this society rests as a

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guardian over the professional interests in the State, and over all the societies in the State; that it should guard the public health, the medical educational interests of the State; that it should always cooperate with all other factors in opposing all invasions by quacks and illegitimate practitioners.

6. That we deplore the attempt to obliterate examinations on materia medica, therapeutics, and practice from examining board requirements; that we consider the suggestion of prohibiting the individual practitioner from dispensing his own medicine, a distinct blow at the individual homœopathic practitioner; that we disapprove of the laws passed by our National Congress recognizing absolutely no remedies as legal medicaments except those prescribed and provided for by the U. S. Pharmacopœia, which is at variance with the Homœopathic Pharmacopœia, and we deprecate generally the methods that are being employed to obliterate the individuality of schools and their institutions.

Committee,
O. S. HAINES,
W. W. BLAIR,
W. A. SEIBERT,
Chairman.

On motion the report was adopted.

The Corresponding Secretary reported that the work of his office had been performed as usual, and that there were no communications in his hands which required action by the society. Under the direction of the Board of Trustees the following program was prepared and sent to every homœopathic physician residing in Pennsylvania:

ORDER OF BUSINESS.

TUESDAY, SEPEMBER 17, 1907.

Morning Session, 10 *to* 1 *O'Clock.*

1. Call to order.
2. Invocation.
3. Address of welcome, Z. T. Miller, M. D., President of the Allegheny County Homœopathic Medical Society.

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4. Response to address of welcome.
5. Address of President, J. J. Tuller, M. D.
6. Roll call, correction of list of members.
7. Report of Corresponding Secretary.
8. Report of Trustees.
9. Report of Committees.
   a. Organization, Registration and Statistics, G. B. Moreland, M. D., Chairman.
   b. Legislation, D. P. Maddux, M. D., Chairman.
   c. Publication, E. M. Gramm, M. D., Chairman.
   d. Membership, W. A. Seibert, M. D., Chairman.
   e. Interstate Committee of the American Institute of Homœopathy.
   f. Delegate to the American Institute of Homœopathy.
10. Report of Necrologist, W. F. Baker, M. D.
11. The following amendment to the By-Laws was properly presented at the last meeting of the society:

Amend Article IV. Section 3, by adding, after the word "annually," the words "no member of the Board of Trustees shall be eligible to serve two terms in succession," so that the Section shall read: "Section 3. The Board of Trustees shall serve for a term of three years, three members to be elected annually. No member of the Board of Trustees shall be eligible to serve two terms in succession."

Section of Surgery.

J. H. McClelland, M. D., Chairman.

Associates—Drs. L. T. Ashcraft, C. A. Bigler, Jr., J. D. Elliott, E. R. Gregg, W. N. Hammond, Arthur Hartley, G. W. Hartman, W. C. Hunsicker, Bayard Knerr, H. L. Northrop, R. W. McClelland, Desiderio Roman, J. H. Thompson, G. A. Van Lennep, W. B. Van Lennep.

L. T. Ashcraft, M. D., Philadelphia, "The Role of the Ureteral Catheter."

C. A. Bigler, Jr., M. D., Philadelphia, "Anal Fissure."

J. D. Elliott, M. D., Philadelphia, "Intestinal Perforation in Typhoid Fever."

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E. R. Gregg, M. D., Pittsburg, "Observations on a Few Clinics Recently Visited."

W. H. Hammond, M. D., Philadelphia, "Treatment of Tuberculous Joints."

Arthur Hartley, M. D., Philadelphia, "Chloroform as an Anæsthetic."

Afternoon Session, 3 to 6 O'Clock.

SECTION OF SURGERY (*Continued*).

G. W. Hartman, M. D., Harrisburg, "Diseases of the Cervical Lymphatics and Their Treatment."

W. C. Hunsicker, M. D., Philadelphia, "Chronic Gonorrhœal Infection of the Posterior Urethra."

Bayard Knerr, M. D., Philadelphia, "Some Notes on Carcinoma."

H. L. Northrop, M. D., Philadelphia, "The Pancreatic Treatment of Cancer."

R. W. McClelland, M. D., Pittsburg, "The Management of Cases of Colles' Fracture."

Desiderio Roman, M. D., Philadelphia, "The Diagnosis and Surgical Treatment of Movable Kidney."

J. H. Thompson, M. D., Pittsburg, "Acute Suppurative Osteo-Myelitis."

G. A. Van Lennep, M. D., Philadelphia, "Appendicostomy; Its Indications and Technique."

W. B. Van Lennep, M. D., Philadelphia, "Some Observations on Cranial Surgery."

SECTION OF SANITARY SCIENCE.

F. B. Quackenbush, M. D., Chairman.

Associates.—Drs. J. D. Boileau, H. F. Schantz.

F. B. Quackenbush, M. D., Philadelphia, "The Opsonin Theory."

J. D. Boileau, M. D., Philadelphia, "The Sanitation of Bedding."

H. F. Schantz, M. D., Reading, "The Reading Sewage Disposal System."

F. W. Smith, M. D., Philadelphia, "Some Phases of Municipal Sanitation."

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Evening Session, 8 to 10:30 O'Clock.

SECTION OF HOMŒOPATHIC INSTITUTES AND CLINICAL MEDICINE.

O. S. Haines, M. D., Chairman.

Associates.—Drs. W. F. Baker, C. Bartlett, W. D. Bayley, R. Bernstein, G. M. Golden, W. C. Goodno, E. M. Gramm, G. B. Moreland, O. H. Paxson, Anna D. Varner, G. H. Wells.

W. F. Baker, M. D., Philadelphia, "The Thoracic Visceral Crises of Locomotor Ataxia." Discussion opened by Dr. C. Bartlett.

Clarence Bartlett, M. D., Philadelphia, "A Series of Unusual Abdominal Cases in Which Erroneous Diagnoses Were Made."

W. D. Bayley, M. D., Philadelphia, "Migraine."

Ralph Bernstein, M. D., Philadelphia, "Topical Cutaneous Therapy—The Indicated Local Remedy, Its Action and the Method of Its Application." (Presented for the Philadelphia Society for Clinical Research.)

G. M. Golden, M. D., Philadelphia, "The Clinical Significance of Irregular Pulse."

E. M. Gramm, M. D., Philadelphia, "Shall We Preserve the Integrity of the Homœopathic School?"

G. B. Moreland, M. D., Philadelphia, "Constipation."

G. H. Wells, M. D., Philadelphia, "The Diagnostic and Therapeutic Uses of Tuberculin."

SECTION OF OPHTHALMOLOGY.

W. W. Blair, M. D., Chairman.

Associates.—Drs. H. B. Bryson, W. W. Speakman, William Spencer, H. S. Weaver.

H. B. Bryson, M. D., Pittsburg, "Ocular Manifestations of Albuminuria."

W. W. Speakman, M. D., Philadelphia, "Complications in the Extraction of Cataract."

William Spencer, M. D., Philadelphia, "The Imbalance of the Ocular Muscles."

H. S. Weaver, M. D., Philadelphia, "The Treatment of Diseases of the External Auditory Meatus."

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WEDNESDAY, SEPTEMBER 18.

Morning Session, 9:30 to 1 O'Clock.

SECTION OF OBSTETRICS.

F. W. Boyer, M. D., Chairman.

Associates.—Drs. J. E. Belville, W. G. Dietz, W. A. Haman, W. C. Mercer, C. C. Rinehart, D. W. Straub, T. W. Swalm.

F. W. Boyer, M. D., Pottsville, "The New Born Child."

J. E. Belville, M. D., Philadelphia, "The Prospective Child."

W. G. Dietz, M. D., Hazleton, "The Period of Gestation."

W. A. Haman, M. D., Reading, "Gestative Conditions Eventuating in Eclampsia."

W. C. Mercer, M. D., Philadelphia, "The Parturient Act."

C. C. Rinehart, M. D., Pittsburg, "A Departure From the Traditional Methods of Delivery in the Second Stage of Labor."

D. W. Straub, M. D., Bethlehem, "The Duties and Technique for the Nurse."

T. W. Swalm, M. D., Pottsville, "Maternal Conditions Incident to the Lying-in Period."

Afternoon Session, 3 to 6 O'Clock.

SECTION OF MATERIA MEDICA AND PROVINGS.

M. M. Fleagle, M. D., Chairman.

Associates.—Drs. S. G. A. Brown, E. A. Farrington, Frederica E. Gladwin, Julia C. Loos.

M. M. Fleagle, M. D., Hanover, "Lycopodium."

S. G. A. Brown, M. D., Shippensburg, "Some Points Concerning Acteæ Racemosa."

G. M. Cooper, M. D., Bryn Athyn, "The Nosodes."

E. A. Farrington, M. D., Philadelphia, "A Comparative Study of Mercury and Its Salts."

Frederica E. Gladwin, M. D., Philadelphia, "The Meeting of the State Homœopathic Medical Society in the Materia Medica Woods; A Character Sketch."

Julia C. Loos, M. D., Harrisburg, "Some Thoughts on Opium."

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WEDNESDAY EVENING.

The members of the Society and visitors will be entertained by the Homœopathic Medical Society of Allegheny County.

THURSDAY, SEPTEMBER 19.

Morning Session, 9:30 to 1 O'Clock.

SECTION OF GYNÆCOLOGY.

D. C. Kline, M. D., Chairman.

Associates.—Drs. N. S. Betts, W. L. Follmer, H. M. Gay, W. L. Gerhart, N. F. Lane, R. L. Piper, C. M. Rhodes, A. C. Shute.

D. C. Kline, M. D., Reading, "Advice to Girls at Puberty." Discussion by A. E. Heimbach, M. D.

N. S. Betts, M. D., Philadelphia, "The Role of Pelvic Vascular Disease in Gynæcology." Discussion by T. J. Gramm, M. D.

H. M. Gay, M. D., Philadelphia, "Two Cases of Miscarriage." Discussion by J. E. James, Jr., M. D.

W. L. Gerhart, M. D., Lewisburg, "Congestion of the Ovaries." Discussion by W. A. Stuart, M. D.

N. F. Lane, M. D., Philadelphia, "Ectopic Pregnancy." Discussion by J. E. James, Sr., M. D.

R. L. Piper, M. D., Tyrone, "Menorrhagia." Discussion by E. H. Morrow, M. D.

C. M. Rhodes, M. D., Harrisburg, "Curetting the Uterus to Remove Secundines." Discussion by Margaret H. Schantz, M. D.

A. C. Shute, M. D., Pottstown, "Lachesis in Affections of the Ovaries." Discussion by M. M. Fleagle, M. D.

Afternoon Session, 3 to 6 O'Clock.

SECTION OF PÆDOLOGY.

W. W. Van Baun, M. D., Chairman.

Associates.—Drs. W. C. Barker, J. L. Redman, C. S. Raue, E. R. Snader.

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W. W. Van Baun, M. D., Philadelphia, "Hysteria in Children." Discussion by J. J. Tuller, M. D.

C. S. Raue, M. D., Philadelphia, "The Modern Trend of Infant Feeding in Difficult Cases." Discussion by W. C. Goodno, M. D.

J. T. Simonson, M. D., New York City, "Some Problems in Pædology." Discussion by E. L. Clark, M. D.

E. R. Snader, M. D., Philadelphia, "The Wet Peritoneum in Typhoid Fever." Discussion by F. E. Howell, M. D.

W. T. Talbot, M. D., Camp Asquam, Holderness, N. H., "Conditions and Needs of Growing Boys." Discussion by J. H. McClelland, M. D.

Symposium on Rickets—Based on Clinical Cases From the Hahnemann Hospital and the Children's Homœopathic Hospital, Philadelphia.

J. L. Redman, M. D., Philadelphia, (*a*) "Introduction and History of Cases."

B. K. Fletcher, M. D., Philadelphia, (*b*) "Blood Examinations."

W. C. Barker, M. D., Philadelphia, (*c*) "X-ray Results."

C. F. Rau, M. D., Philadelphia, (*d*) "Treatment and General Management."

Discussion by E. R. Snader, M. D.

Section of Pathology and Pathological Anatomy.

J. E. James, Jr., M. D., Chairman.

Associates.—Drs. Ralph Deming, T. J. Gramm, Watson Marshall.

J. E. James, Jr., M. D., Philadelphia, "The Histology of Involution of the Uterus During the Puerperium." Report of a Case.

E. A. Farrington, M. D., Philadelphia; F. H. Widman, M. D., Philadelphia, "An Experimental Study of the Heart's Action in Anæsthesia."

W. H. Lyle, M. D., Philadelphia, "Leukæmia."

Symposium—Under the Auspices of the Pittsburg Pathological Society.

W. W. Blair, M. D., Pittsburg. (*a*) "Ocular Arterio-Sclerosis."

Watson Marshall, M. D., Pittsburg, (*b*) "Vascular Changes in Arterio-Sclerosis."

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F. D. Stolzenbach, M. D., Pittsburg, (*c*) "Abdominal Arterio-Sclerosis."

Conclusion of reports of Sections and discussions.

Final reports of the Board of Censors.

Unfinished business.

New business.

Selection of place for next meeting.

Adjournment.

Ella D. Goff, M. D., presented the

REPORT OF THE TREASURER.

Pittsburg, Pa., Sept. 16, 1907.

To the Officers and Members of the Homœopathic Medical Society of Pennsylvania:

I beg leave to sumbit herewith the annual report of the Treasurer of the Society for the fiscal year ending September 16, 1907.

RECEIPTS.

Balance on hand, September 5, 1906	$1,973.71	
Annual dues collected during the year	1,550.00	
		$3,523.71

EXPENDITURES.

1906.			
Sept.	5.	By order, No. 57, to Ed. M. Gramm, for Polk's Directory and bills of Van Fleet & Son and the Keating Co.	$23.75
"	5.	By order, No. 58, to E. M. Gramm, for postage, addressing and stamping notices, programs, invitations, etc., expressage, traveling expenses and services of stenographer getting out Transactions..	269.56
"	7.	By order, No. 59, to T. B. & H. B. Cochran, for printing notices, programs, circulars, etc.	38.50
"	8.	By order, No. 60, to Dr. Ella D. Goff, for traveling expenses	50.00

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"	8.	By order, No. 61, to Dr. Geo. B. Moreland, for traveling expenses	50.00
"	8.	By order, No. 62, to Geo. B. Moreland, M. D., for printing, typewriting, etc.	15.75
"	10.	By order, No. 63, to Dr. Ella D. Goff, for printing, stamped envelopes, etc.	20.00
"	8.	By order, No. 64, to Dr. C. P. Seip, for postage	5.00
"	8.	By order, No. 65, to John Reading, for janitor services	10.00
"	14.	By order, No. 66, to Wm. M. Clift, for stenographer's fees, reporting session	100.00
Dec.	6.	By order, No. 67, to The Examiner, for printing Transactions, etc. ..	747.50
"	6.	By order, No. 68, to I. B. Gilbert, for postage, etc.	2.00
"	6.	By order, No. 69, to E. M. Gramm, for mailing President's Address,	17.00
1907.			
Jan.	24.	By order, No. 70, to Dr. H. M. Bunting, Sec'y-Treas. Legislative Committee for expenses of Com.	200.00
Feb.	8.	By order, No. 71, to H. M. Bunting, Sec'y Legislative Committee, for expenses of Committee	100.00
June	28.	By order, No. 72, to H. M. Bunting, for expenses of Legislative Committee	300.00
"	28.	By order, No. 73, to W. A. Seibert, for Membership Committee	300.00
Sept.	16.	By balance on hand	1.274.65
			3.523.71

Respectfully submitted,

ELLA D. GOFF, *Treasurer.*

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George B. Moreland, M. D., Chairman, presented the following

REPORT OF THE COMMITTEE ON ORGANIZATION, REGISTRATION AND STATISTICS.

September 17, 1907.

To the Homœopathic Medical Society of the State of Pennsylvania:

Your Committee on Organization, Registration and Statistics presents its annual report for publication. A list of the local societies and of the hospitals and dispensaries under our control is given, and a detailed statement of data obtainable concerning them is placed at your disposal.

We desire, through the medium of this report, to thank all who have answered our requests for information.

Respectfully submitted,

GEO. B. MORELAND, M. D.,
Chairman.

D. P. Maddux, M. D., Chairman, presented the following

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HOMŒOPATHIC MEDICAL SOCIETIES

NAME.	PRESIDENT.
Lehigh Valley Homœopathic Medical Society.	E. D. Doolittle, M. D., Easton.
Homœopathic Society of Northeastern Pennsylvania.	Anna C. Clarke, M. D., Scranton.
Homœopathic Medical Society of Philadelphia County.	L. T. Ashcraft, M. D., Philadelphia.
Homœopathic Medical Society of Allegheny County.	Z. T. Miller, M. D., Pittsburg.
Homœopathic Medical Society of the 23d Ward, Philadelphia.	Thomas D. Clegg, M. D., Philadelphia.
Homœopathic Medical Society of Schuylkill County.	Ellwood K. Steckel, M. D., Orwigsburg.
Alumni of Hahnemann Medical College of Philadelphia.	W. W. Blair, M. D., Pittsburg.
Homœopathic Medical Society of Beaver County.	S. B. Moon, M. D., Beaver Falls.
Germantown Homœopathic Medical Society.	Philadelphia.
Hahnemann Club of Philadelphia.	J. E. Belville, M. D., Philadelphia.
Oxford Medical Club of Philadelphia.	C. M. Brooks, M. D., Philadelphia.
Woman's Homœopathic Medical Club of Philadelphia.	Margaret C. Lewis, M. D., Philadelphia.
Bœnninghausen Medical Club of Philadelphia.	T. P. Gittens, M. D., Philadelphia.
Homœopathic Practitioners' Association of Reading.	H. F. Schantz, M. D., Reading.
A. R. Thomas Club of Philadelphia.	W. W. Speakman, M. D., Philadelphia.
The Clinico-Pathologic Society of Philadelphia	J. C. Guernsey, M. D., Philadelphia.
Philadelphia Clinical Society.	Chas. M. Thomas, M. D., Philadelphia.
Philadelphia Medical Club.	
East End Doctors' Club.	
Homœopathic Pharmaceutical Association of Pennsylvania.	F. J. Slough, M. D., Allentown.
Homœopathic Medical Society of Delaware County.	W. F. Lee, M. D., Manoa, Delaware Co.
Homœopathic Medical Society of Chester County.	Morris Hughes, M. D., Kennett Square.
Homœopathic Medical Society of Luzerne County.	W. F. Roth, M. D., Wilkes-Barre.
Homœopathic Medical Society of Lackawanna County.	G. M. De Witt, M. D., Scranton

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OF THE STATE OF PENNSYLVANIA.

Secretary.	Organized.	Meetings.	Number of Members.	Dues.
A. J. Bittner, M. D., Allentown.	1881	Bi-Monthly.	30	$1.00
Theodore M. Johnson, M. D., Pittston.	1882	Semi-Annually.	26	2.00
J. D. Elliott, M. D., Philadelphia.	1866	Monthly.	275	1.00
H. S. Nicholson, M. D., Pittsburg.	1864	"	80	2.00
John D. Boileau, M. D., Philadelphia.	1881	"	30	1.00
E. H. Maurer, M. D., Ashland	1882	Quarterly.	26	1.00
W. D. Carter, M. D., Philadelphia.	1857	Annually.	1778	
Wm. Raymer, M. D., Beaver Falls.	1883	Monthly.	9	1.00
Philadelphia.	1883	"		
T. S. Dunning, M. D., Philadelphia.	1872	"	10	
C. W. Simmons, M. D., Philadelphia.	1885	"	18	5.00
Margaret E. Burgess, M. D., Philadelphia.	1883	"	16	
Geo. W. Smith, M. D., Philadelphia.	1877	"	9	
Margaret Hassler Schantz, M. D., Reading.	1896	"	17	1.00
A. A. Norris, M. D., Philadelphia.	1888	"	21	
Theo. J. Gramm, M. D., Philadelphia.	1894	"	90	2.00
J. C. Guernsey, M. D., Philadelphia.	1874		6	
E. P. Anshutz, M. D., Philadelphia.	1881		13	
Geo. C. Webster, M. D., Chester.	1895	Bi-Monthly.	25	1.00
L. Hoopes, M. D., West Chester.	1898	"	19	1.00
C. C. Thompson, M. D., Wilkes-Barre.	1899	"	16	
R. V. White, M. D., Scranton.	1900	Monthly.	16	

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HOMŒOPATHIC MEDICAL SOCIETIES

NAME.	PRESIDENT.
Philadelphia Medical and Surgical Society.	
Women's Homœopathic Association of Pittsburg.	Millie J. Chapman, M. D., Pittsburg.
Organon Medical Club of Chester.	
Wm. B. Van Lennep Clinical Club.	W. A. Weaver, M. D., Philadelphia.
Goodno Homœopathic Medical Society.	E. T. Prizer, M. D., Lancaster.
Homœopathic Medical Society of Delaware, Chester and Montgomery Counties.	Edward S. Haines, M. D., Rutledge, Delaware Co.
Homœopathic Medical Society of Lebanon County.	Wm. F. Bruce, M. D., Lebanon.
Raue Medical Club of Central Pennsylvania.	I. D. Metzgar, M. D., Tyrone.
Homœopathic Medical Society of Erie County.	J. C. M. Drake, M. D., Erie.
Philadelphia Society for Clinical Research	M. W. Sloan, M. D., Philadelphia.
West Branch Homœopathic Medical Society	W. H. Fullmer, M. D., Milton.

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OF THE STATE OF PENNSYLVANIA.

Secretary.	Organized.	Meetings.	Number of Members.	Dues.
Jane Gilleford, M. D., Allegheny.	1899	Monthly.		
Arthur Hartley, M. D., Philadelphia.	1895		17	$2.00
E. S. Snyder, M. D., Lancaster	1899	Quarterly.	35	1.00
Isaac Crowther, M. D., Chester.	1858	Bi-Monthly.	76	1.00
F. E. Bamberger, M. D., Lebanon.	1904	"	17	1.00
D. M. Roudabush, M. D., Altoona.	1901	Monthly.	21	1 00
Lucy H. Black, M. D., Erie.	1891	"	20	3.00
Ralph Benstein, M. D., Philadelphia.	1905	"	15	6.00
E. C. Blackburn, M. D., Williamsport.	1907	"	11	1.00

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HOMŒOPATHIC DISPENSARIES

NAME.	SECRETARY.	LOCATION.
General Dispensary of the Pittsburg Homœopathic Hospital.	D. G. Stewart, M. D., Pittsburg.	Pittsburg.
Eye and Ear Dispensary of the Pittsburg Homœopathic Hospital.	D. G. Stewart, M. D., Pittsburg.	Pittsburg.
Hahnemann Medical College Hospital Dispensary of Philadelphia.	Wm. G. Foulke, M. D., Philadelphia.	Philadelphia.
Children's Homœopathic Hospital Dispensary.	Walter Strong, M. D., Philadelphia.	Philadelphia.
Hahnemann Hospital Dispensary.	Miss E. K. Richmond, Scranton.	Scranton.
Homœopathic Dispensary of Reading.	W. W. Light, M. D., Reading.	Reading.
Dispensary Women's Homœopathic Association of Pennsylvania.	Mrs. F. B. Skinner, Philadelphia.	Philadelphia.
St. Luke's Homœopathic Hospital.	M. E. Lewars, M. D., Philadelphia.	Philadelphia.

HOMŒOPATHIC HOSPITALS

NAME.	LOCATION.	SECRETARY OR EXECUTIVE OFFICER.	Incorporated.	Opened to Patients.
Medical, Surgical and Maternity Hospitals of the Women's Homœopathic Association of Pennsylvania.	Philadelphia.	F. B. Skinner.	1882	1884
Children's Homœopathic Hospital.	Philadelphia.	W. Strong, M. D.	1877	1877
Homœopathic Medical and Surgical Hospital.	Pittsburg.	D. G. Stewart, M.D.	1866	1866
Hahnemann Medical College Hospital.	Philadelphia.	C. Mohr, M. D.	1848	1848
Hahnemann Hospital.	Scranton.	Miss L. Teuney.	1897	1897
Homœopathic Medical and Surgical Hospital.	Reading.	W. W. Light.	1890	1891
Woman's Southern Homœopathic Hospital of Philadelphia.	Philadelphia.	Miss A. M. Miller.	1896	1896
St. Luke's Homœopathic Hospital.	Philadelphia.	W. H. Keim, M.D.	1906	1906
Beaver Valley General Hospital.	New Brighton.	Miss A. E. McCowan.	1894	1895
J. Lewis Crozer Home for Incurables and Homœopathic Hospital.	Chester.	S. K. Ubil.	1897	Home 1900 Hospital 1903

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OF THE STATE OF PENNSYLVANIA.

Incorporated.	Opened.	No. of New Patients Last Year.	Treated Last Year.	Prescriptions Last Year.	Out Visits.	Amt. of Funds belonging to Dispensary
1866	1866	3,707	12,322	9,935		
1866	1866	693	4,136	4,117		
1848	1848	27,670	28,089	130,672	623	
1877	1877	8,682	33,000	12,752	790	$550.21
1897	1897	170	325	447		
1887	1888	1,058	3,253	5,311		
1882	1884		4,437	15.779	133	
1896	1896	2,428	9 876	6,294		

OF THE STATE OF PENNSYLVANIA.

No. of Beds.	Treated Last Year.	Cured.	Relieved.	Not Relieved.	Died.	Estimated Value of Property and Grounds.	Source of Income.
80	1,010	890	31	2	6	$250,000.00	
130	1,116	650	107	97	203	210,000.00	State aid and Donation.
140	3,910	3,745		165		850,000.00	
140	1,771	1,574	76	21	100	1,250,000.00	
51	370	243	65	11	20	120,000.00	
75	426	323	60	4	39	75,000.00	
35	335	241	81	14	19	25,000.00	
53	646	355	190	41	60	125,000.00	
50	356	313	7	3	32	50,000.00	
Home 26 Hospital 50							Endowed.

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REPORT OF THE COMMITTEE ON LEGISLATION.

The Legislative Committee of the Homœopathic Medical Society of the State of Pennsylvania would respectfully submit the following as their report:

The formal organization for the winter's work was effected at a meeting held on October 18, 1906, to which all members were duly summoned. At this meeting Dr. H. M. Bunting was elected Secretary-Treasurer, and most faithfully has he discharged the duties of that office. The detailed report as to meetings and expenses incurred will be duly submitted by him.

An early effort was made to hold a conference with the Legislative Committee of the dominant school of medicine in order that we might act conjointly in all matters of common interest, that would tend to elevate the standards of our profession. After several futile efforts a conference was finally effected at the office of the chairman of their committee. At this conference the draft of a bill regulating medical practice in this State, which had been prepared and endorsed by their committee, was presented for consideration to your committee. The purport of this bill, while containing many elements of merit as to advancing medical standards, was rendered inacceptable to us by reason of the fact that it proposed to create one Board of Medical Examiners, in which our school was assured of but a single representative.

The matter of a single board against a board representing each reputable school of medicine was most earnestly discussed at this conference, and the attitude of all the members of your committee there present was that, in the present condition of the schools of medicine, a single examining board would be inimical to the best interests of our own school of medicine.

In every particular where the elevation of the standards of medical education was suggested we were in hearty accord, and were willing to unite with them most cordially and earnestly in all that tended to keep out of the practice of medicine all but thoroughly trained physicians.

So vigorously did we represent our sentiments in this matter that

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the chairman of their committee said he "saw it was a hopeless impossibility to pass a one-board measure at this time," and agreed to present a bill retaining the three examining boards; said bill correcting many of the deficiencies of the present law and so raising the requirements as to render possible the establishment of reciprocal relations with other States having higher standards.

This agreement was *nominally* kept. Copies of the bill were sent to your committee, and on January 17th, Bowman Bill, number one, containing the corrections mutually agreed upon, was presented to the House; but on January 31st, Bowman Bill, number two, incorporating the very conditions which had caused our earnest protests, was sent to the House, no notice whatever being received by your committee to that effect.

The dominant school thus presumed the absolute dictation of the policies of medical education in this State, ignoring the rights of the minority schools, and assumed that their numerical superiority would enable them to accomplish their ends irrespective of the rights and interests of others.

You all know the history of the struggle, how all their great strength of numbers, prestige and influence were brought to bear to pass the bill, but fortunately we had to deal with an exceedingly fair and unbossed Legislature to which we made most persistent and strenuous appeals, and Bowman Bill, number two, after repeated alterations and amendments, each one complicating, instead of clarifying the situation, met most ignominious defeat.

It is unpleasant to record the fact that the efforts of your committee met with apathetic response from some whose interest and position should have made them its most active supporters. The work of your committee was at one period further hampered by the official endorsement the Bowman Bill received from one of our county societies, the effort being made by advocates of the bill to make it appear that this society represented the profession at large. Happily this error was soon dispelled by emphatic protests coming from the larger and more representative societies and by the very definite and earnest statements from the members of our profession.

The fact remains, however, that although the Bowman Bill was defeated, matters remain far from satisfactory in reference to medical licensure in this State. Nor does your committee believe they

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will be permanently adjusted so long as the inherent civil rights of qualified practitioners are either denied or imperiled.

I would most earnestly recommend that the Legislative Committee to be appointed at the present meeting devote much time and serious attention to the preparation of a measure which will properly express the attitude of our school in this matter. There being no meeting of the State Legislature before our State Society again convenes, would afford time for the proper consideration of this most important subject.

I would respectfully urge that a liberal appropriation be made from the funds of this society for the execution of this work. It may be necessary to secure good legal talent to formulate any proposed laws, and properly advise us as to methods to be pursued. All this will involve considerable expense.

If comment is made upon the amount of money spent by this committee, we beg leave to report that an unusual effort was put forth, and an unusually decisive victory won.

While the bill was pending it was watched at every stage by one or more members of your committee actually present at Harrisburg, and when the bill was before the Committee or House, a large delegation of earnest, active workers was there to insure its defeat.

The items of expense incurred have been subjected to a careful scrutiny, and the total represents much less than the actual amount expended by the members.

I do not think we can well overestimate the vital importance to Homœopathy as a school, of the coming Legislative struggle. Our school in New York has gone down in defeat. A unification that is enforced cannot be cordial or effective, and we must recognize that our institutions and organizations are in imminent danger. Let the one-board and the one-school come, and hasten the day; but only let them come when the thorough teaching of the principles of Homœopathy is required as an integral part of all medical education.

In conclusion, I desire most heartily to thank the various clubs and societies and the members of the profession who have so heartily co-operated with this committee. Especially are the thanks of the profession throughout the State due to the president and corresponding secretary of this society, who have been indefatigable in their labors.

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H. M. Bunting, M. D., presented the following

REPORT OF THE SECRETARY OF THE COMMITTEE ON LEGISLATION.

Mr. President and Members of the State Society:.

As Secretary and Treasurer of the Legislaive Committee, I have the honor to report that this committee has held during the past year ten meetings in Philadelphia, the first being on October 18, 1906, the last on September 11, 1907. We have had an average attendance of nine members, and on several occasions visitors interested in the work of the committee, would honor us by their presence and advice.

During the session of the Legislature members of this committee were active and untiring in their work at Harrisburg, and many were the trips made to that city, when guidance, advice, encouragement, argument and a general watchfulness over the situation was demanded.

To meet the expenses and work of this committee the State Society was requisitioned to the amount of six hundred dollars ($600.00). Besides this we have contributions from county societies, from independent societies and clubs, and from the faculty of Hahnemann Medical College and private individuals, totalling three hundred and nine dollars and eight-nine sents ($309.89), which, with the six hundred dollars of the State Society ($600.00), gave us a grand total of nine hundred and nine dollars and eighty-nine cents ($909.89), with an expenditure of nine hundred and nine dollars and seventy-nine cents ($909.79), leaving in the hands of the treasurer *ten cents*.

On motion the reports of the Chairman and Secretary of the Committee on Legislation were received, and action thereon made the special order of business for Wednesday morning at 10 o'clock.

At that time the reports were adopted with the thanks of the society; whereupon

Dr. J. H. McClelland presented the following resolution, which was unanimously adopted:

Resolved, That it is the sense of the Homœopathic Medical Society of the State of Pennsylvania that a single board of medical examiners is detrimental to the true interests of the people and of the

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homœopathic profession; and, therefore, all members of the profession, and particularly those holding representative positions, are earnestly requested to use all the influence they have to maintain the present three-board system, and, under no circumstance, to give any aid in furthering the establishment of a single board.

Dr. J. H. McClelland also offered the following resolution, which was unanimously adopted, and the president and corresponding secretary were directed to carry out its mandates:

Resolved, That the delegate to the National Confederation of Medical Examining and Licensing Boards, representing the Homœopathic Medical Society of the State of Pennsylvania, be informed of the action of this society in its unanimous endorsement of "A Three-Board Bill," and said delegate be instructed to do all in his power to preserve the existenec of a separate Board representing the Homœopathic School of Medicine.

Dr. E. M. Gramm, Chairman of the Committee on Publication, reported that the Transactions of the session of 1906 had been issued promptly owing to the co-operation of the members of the society who had read papers at that meeting, and bespoke for the committee the same assistance in completing the records of the meeting of 1907.

Dr. W. A. Seibert, Chairman, presented the following

REPORT OF THE COMMITTEE ON MEMBERSHIP.

The objects for which our society was granted a charter are the "organization of the homœopathic profession in the State of Pennsylvania and the advancement of medical sciences." The duties of the Membership Committee are with reference to the organization of the profession in the State. The committee appointed by your president has devoted itself faithfully ever since appointed, and we believe has accomplished as much as could well have been accomplished in a brief period.

Not less than three new county societies have been fully organized and will be heard from. Several more have been started on the way and promise complete organization before the next meeting of this society; and not less important, some indifferent, even languishing societies, have been revived. We have been urging the importance

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of attending the meetings of this society, and we pride ourselves on having added materially to our membership. To illustrate the power of co-operation and harmony as well as the importance of this committee, it may be an interesting item probably to record the fact that this committee has added more than 300 names to our membership roll within four years.

Incidentally we have learned much of vital interest and value, even have had an abundance of amusement that can only be gathered by communicating with the individuals of our profession. This material is of immense value to the Membership Committee of the future, and furnishes much valuable information at this particular time to the Legisltaive Committee, which is about to engage in what seems a gigantic labor of self-preservation.

The value of the work that can be done by this committee can only become evident by the results that you will have an opportunity to reflect upon.

We would suggest the immediate appointment of a new committee, on account of the great amount of work before it for the ensuing year, and, last but not least, the consideration of the losses and sacrifices necessarily sustained by the members of this committee by substantial financial remembrance.

Owing to the absence of Drs. G. W. Smith and C. E. Myers, the president appointed Drs. F. W. Boyer and T. H. Carmichael Censors pro tem. The latter, with Dr. H. F. Schantz, recommended for election the following applicants for membership, after having examined their qualifications. The applicants for membership were thereupon unanimously elected to membership.

REPORT OF THE BOARD OF CENSORS.

G. S. Africa, M. D., Homœopathic Hospital, Pittsburg.
P. A. Andrews, M. D., Allentown.
Russell B. Armor, M. D., Crafton.
B. G. Arnold, M. D., Downingtown.
G. H. Bickley, M. D., 1429 S. Broad Street, Philadelphia.
Albert J. Bittner, M. D., Allentown.
James A. Black, M. D., 423 Charles Street, S. S., Pittsburg.
G. M. Bradford, M. D., Mt. Morris

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H. G. Briggs, M. D., 704 Bessemer Bldg., Pittsburg.
J. T. Burnite, M. D., Brownsville.
Charles S. Caldwell, M. D., Swissvale.
Horace G. Carmalt, M. D., 333 Grandview Avenue, Pittsburg.
Mary E. Coffin, M. D., 3823 California Avenue, Allegheny.
George M. Cooper, M. D., 2045 Chestnut Street, Philadelphia.
Herbert B. Coy, M. D., 2724 Girard Avenue, Philadelphia.
J. J. Crawford, M. D., Coraopolis.
L. F. Davies, M. D., Nazareth.
William K. Detwiller, M. D., Easton.
E. H. Douds, M. D., Beaver Falls.
John P. Douglass, M. D., McDonald.
S. Leon Dreibelbis, M. D., Reading.
T. Snively Dunning, M. D., Columbia.
Harry M. Eberhard, M. D., 1710 N. 18th Street, Philadelphia.
H. R. Edwards, M. D., Shady and Marshall Avenues, Pittsburg.
R. K. Fleming, M. D., 315 S. Highland Avenue, Pittsburg.
G. M. Focht, M. D., Lebanon.
F. B. Forrest, M. D., Bellwood.
Frank J. Frosch, M. D., 2616 N. 5th Street, Philadelphia.
Harry M. Gangloff, M. D., Uniontown.
Robert A. Gans, M. D., Connellsville.
John C. Gaston, M. D., Beaver Falls.
Alfred Gates, M. D., Lebanon.
C. P. Geddes, M. D., Washington.
George W. Getze, M. D., Tarentum.
Edward F. Gifford, M. D., Erie.
J. W. Goodsell, M. D., New Kensington.
Charles R. Haman, M. D., Reading.
J. G. Hennington, M. D., Uniontown.
William W. Insley, M. D., Donora.
Frank B. Jackson, M. D., Oil City.
Levi J. Knerr, M. D., 55 N. 40th Street, Philadelphia.
W. J. Kiefer, M. D., 373 N. 8th Street, Lebanon.
F. W. Koons, M. D., Homœopathic Hospital, Pittsburg.
Frank H. Lawrence, M. D., 1518 Perkiomen Avenue, Reading.
F. C. Leas, M. D., 400 S. 40th Street, Philadelphia.

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Margaret C. Lewis, M. D., 4027 Spring Garden Street, Philadelphia.
Howard W. Long, M. D., 1534 W. Lehigh Avenue, Philadelphia.
E. H. Maurer, M. D., Ashland.
George W. Maust, M. D., Lock Haven.
L. E. McBride, M. D., Franklin.
J. McEldowney, M. D., 4939 Catharine Street, Philadelphia.
George A. Merkel, M. D., Minersville.
Benjamin E. Merrill, M. D., Dent's Run.
John Murphy, M. D., Loretta.
Edwin L. Nesbit, M. D., Bryn Mawr.
H. S. Nicholson, M. D., 1002 Empire Bldg., Pittsburg.
H. J. O'Donnell, M. D., 11 Washington Avenue, Pittsburg.
James A. Osborn, M. D., Hilton.
J. F. Peterman, M. D., 523 Cumberland Street, Lebanon.
Charles Platt, M. D., 3612 Baring Street, Philadelphia.
Howard Powell, M. D., Glenside.
D. J. Price, M. D., Shenandoah.
W. M. Proctor, M. D., Braddock.
Hannah C. Reinhold, M. D., Williamsport.
A. J. Riegel, M. D, 368 N. 8th Street, Lebanon.
J. S. Rittenhouse, M. D., Reading.
Walter P. Robinson, M. D., Homœopathic Hospital, Pittsburg.
John F. Rowland, M. D., 430 N. 52d Street, Philadelphia.
C. W. Sager, M. D., Titusville.
S. W. Sappington, M. D., 1826 N. 13th Street, Philadelphia.
F. W. Seidel, M. D., Front and Buttonwood Streets, Reading.
Warren B. Shepard, M. D., Homœopathic Hospital, Pittsburg.
W. C. J. Slough, M. D., Emaus.
Clarence R. Smith, M. D., 6338 Woodbine Avenue, Philadelphia.
Frederick W. Smith, M. D., 1430 Wolfe Street, Philadelphia.
F. J. E. Sperling, M. D., Wilkes-Barre.
John G. Sperling, M. D., Wilkes-Barre.
Ellwood, K. Steckel, M. D., Orwigsburg.
T. W. Stephens, M. D., Wilkinsburg.
Rudolph Straube, M. D., 2822 Girard Avenue, Philadelphia.
Robert F. Strayer, M. D., York.
F. W. Sunanday, M. D., Bernhart's P. O.

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William S. Taylor M. D., Malvern.
George H. Thacher, M. D., 2008 Chestnut Street, Philadelphia.
Delano C. Thomas, M. D., Forbes and Atwood Streets, Pittsburg.
Leon Thurston, M. D., Empire Bldg., Pittsburg.
Percy A. Tindall, M. D., 1613 S. Broad Street, Philadelphia.
W. H. Tomlinson, M. D., 44 E. Walnut Lane, Philadelphia.
J. C. Van Keuren, M. D., Chester.
E. M. Vaughan, M. D., Royersford.
H. D. Wallace, M. D., 412 Sandusky Street, Allegheny.
L. P. Walley, M. D., Mifflintown.
John H. Weil, M. D., 2838 N. 5th Street, Philadelphia.
Charles H. Wells, M. D., 434 N. 38th Street, Philadelphia.
C. I. Wendt, M. D., 117 S. Highland Avenue, Pittsburg.
Frederic P. Wilcox, M. D., 2031 Diamond Street, Philadelphia.
Clara H. Williams, M. D., Wilkinsburg.
C. C. Williams, M. D., 24 Washington Avenue, S. S., Pittsburg.
H. C. Witmeyer, M. D., 500 N. 8th Street, Lebanon.
W. Wesley Wolfe, M. D., 24 N. Diamond Street, W., Allegheny.
F. H. Woodward, M. D., Sugar Grove.
George G. Yost, M. D., 643 N. 16th Street, Philadelphia.

W. F. Baker, M. D., presented the following

REPORT OF THE NECROLOGIST.

It is very fitting and proper that we should, in the course of our deliberations, stop and pay a lasting tribute to those who have been associated with us in fellowship and membership in our State organization. A word concerning those who, since our last meeting, have laid down the implements of medical warfare and have won their reward for faithful service and stewardship. Well might it be said of them that "They rest from their labors."

Among the missing we mention this year:
Dr. Pemberton Dudley, died March 25, 1907.
Dr. Chandler Weaver, died November 1, 1906.
Dr. Paul F. Felsburg, died October 28, 1906.
Dr. H. K. Hoy, died July 5, 1906.
Dr. Mary Brewer, died June 10, 1907.

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Dr. Henry W. Fulton.

While it is true that these have lived with us and have served us for many years, yet we miss them, but willingly bow in humble submission to the will of the Almighty.

PEMBERTON DUDLEY, M. D.

A charter member of this society and one known and esteemed by every one of us, Dr. Pemberton Dudley passed beyond on March 25, 1907.

Dr. Dudley was born near Torresdale, Pa., October 17, 1837. His parents, William Dudley and Eleanor Wood, were descendants of the New England pilgrims. He obtained his education in the public schools and in an academic institution. He taught school for two years, and at the same time read medicine under Dr. David James. He attended lectures in Jefferson Medical College for one year, and then attended the Homœopathic Medical College of Pennsylvania, from which institution he graduated in the Class of 1861. His practice has always been in Philadelphia. He assisted to organize the Philadelphia County Homœopathic Medical Society in 1866, and the following year, 1867, was a charter member of this society. He has been president of both bodies. He joined the American Institute of Homœopathy in 1869; was for seven years its general secretary and editor of its Transactions, and in 1896 was its president.

At the session of the American Institute of 1871 he was one of the initiators of the plan for the World's Convention to be held in Philadelphia in 1876, and was a member of the committee to perfect its preliminary arrangements. Dr. Dudley was honorary secretary of the World's Congress of Homœopathic Physicians at Chicago at the Columbian Exposition of 1893.

He was an honorary member of the Maryland Homœopathic Medical Society, the Southern Homœopathic Medical Association, the British Homœopathic Society and the Homœopathic Institute of Mexico. In 1868 Dr. Dudley was chosen to the chair of chemistry and toxicology in his Alma Mater. In 1876 he accepted the chair of physiology and microscopic anatomy, which he filled until 1890, when he became professor of institutes of medicine and hygiene, which position he occupied until his death.

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He was a member of the building committee of the new college.

When the Hahnemann Club, of Philadelphia, was formed, Dr. Dudley became one of the original members and aided that club in organizing the Children's Homœopathic Hospital, of Philadelphia, of which he was a trustee and a member of the medical staff. The Hahnemann Club having in 1880 become proprietors of the Hahnemannian Monthly, he was appointed editor, which position he held until 1888. Dr. Dudley was appointed by Governor Pattison one of the seven members of the State Board of Health upon its organization in 1885, and served by reappointment for twelve years, and was chairman of the Committee on Food Adulterations. In July, 1895. he was elected president of the Board. In 1896 he was elected to the office of dean of the faculty of the Hahnemann Medical College of Philadelphia, which post he filled for seven years.

Dr. Dudley revised and edited the new edition of Hahnemann's Chronic Diseases, published in two large volumes.

He wrote the article on Homœopathy for the Encyclopædia Americana, Vol. 8. In 1896 he received the degree of LL. D. from Rutherford College of North Carolina.

On December 25, 1867, he was married to Sarah Keen, daughter of the Rev. John Perry Hall. Dr. Dudley left two children, Perry Hall Dudley, M. D., who succeeds his father in practice, and a daughter, Mrs. David Dudley Perkins.

In December, 1906, Dr. Dudley was injured severely while alighting from a street car in West Philadelphia. From that time until his death he suffered greatly. He was unable to lie down, and was obliged to rest himself on a chair with his arms over the back.

Two weeks before the end he resigned himself to death, and informed his sister-in-law and nurse, Miss Ada Hall, that the end was near.

He expressed a wish to be buried in accordance with his own wishes, and Miss Hall copied the funeral arrangements as dictated by her brother-in-law. These requests were fulfilled. The services were held at the residence on Thursday, March 28th, with only the intimate friends of the family present. The pall bearers were selected from the members of the Germantown and Hahnemann Clubs. Services were held at the Gethsemane Baptist church, at 18th and Columbia Avenue, of which he had been a member for many years.

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At this public funeral the faculty and students of the college and the profession attended to do the last honors to a man who was beloved of all men.

According to his wish two of his favorite hymns were sung, "God Be With You Till We Meet Again," and "It Is Well With My Soul."

The interment was at Blockley Baptist cemetery.

Dr. Dudley was one of the best known men in the profession, a power for good in the advancement of truth, always genial, calm, mild of speech and slow to anger, and one who had great control over himself. To his patients he was friend as well as physician. His life was a consistent Christian one. And in his death-time he had no fear, but sure of the future at the last,

> "He wrapped the drapery of his couch around him
> And lay down to pleasant dreams."

And well he with Socrates could say at the last:

"On account of these things, then, a man ought to be confident about his soul, who, during this life, has disregarded all the pleasures and ornament of the body as foreign from his nature; and who having thought that they do more harm than good, has zealously applied himself to the acquirement of knowledge; and who, having adorned his soul not with a foreign, but his own proper ornament—temperance, justice, fortitude, freedom, and truth—thus waits as one who is ready to depart, whenever destiny shall summon him."

PAUL F. FELSBERG, M. D.

In direct contrast to the long life of Dr. Dudley, we are called upon to record the sudden termination by accident of one of the very promising careers, early in his professional life and usefulness.

On Sunday, October 28, 1906, Dr. Felsberg left Philadelphia for Atlantic City on the new electric line to the sea. This he had intended as a recreation for himself and wife.

At a distance of about possibly a mile from Atlantic City in the so-called "Thoroughfare," the train plunged over the newly erected draw bridge and imbedded the coach, in which Dr. Felsberg and his wife were seated, in the mud.

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The bodies of the two were recovered some time later, and many are the sad recollections in Philadelphia of that terrible disaster.

DR. MARY BREWER.

In the death of Dr. Mary Brewer this society has lost one of its most prominent workers among the women connected with our profession. A woman of a high professional standing and a widespread reputation. She was graduated from the Woman's Homœopathic College, of New York City, in 1894. She afterward settled in Germantown, Philadelphia, where she built up a magnificent practice.

Her health began to fail about one and one-half years before her death, which took place on June 10, 1907.

She was physician of the Woman's Homœopathic Hospital, of Philadelphia; a member of County, State and National Societies. She was also physician to the Hospitals of the Woman's Homœopathic Association of Pennsylvania, and took an active part among the transactions of all their business.

The women or our profession especially feel her loss, and have asked for this record.

CHANDLER WEAVER, M. D.

Little did the writer think when listening to Dr. Weaver last session of this society that he would be called upon to fill his place at the next meeting, yet such is the case.

Dr. Weaver has been the Necrologist of this society for several years, and has filled his post of duty well. His health, however, began failing shortly after the close of our last session, and in November he died.

While living the life of a retired country resident, he never lost sight of the advance in medical teaching and the active transactions of our society.

We do certainly miss such an aggressive man, who, when his time of life called for quiet and rest, insisted on being in the front ranks of the profession.

Dr. Weaver died at Fox Chase, Philadelphia, on November 1, 1906.

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On motion the amendment to Article IV, Section 3, of the By-Laws, presented at the last annual meeting was adopted, so that the Article now reads:

"Section 3. The Board of Trustees shall serve for a term of three years, three members to be elected annually. No member of the Board of Trustees shall be eligible to serve two terms in succession."

ELECTION OF OFFICERS.

The President appointed Drs. M. M. Fleagle and L. W. Thompson to act as tellers to conduct the election of officers. As there were no opposing candidates for any office the Recording Secretary was, on motion, directed to cast the ballot for each nominee.

The officers elected were:

President, W. F. Edmundson, M. D., Pittsburg.

First Vice-President, J. M. Maurer, M. D., Washington.

Second Vice-President, F. B. Quackenbush, M. D., Philadelphia.

Recording Secretary, G. B. Moreland, M. D., Pittsburg.

Corresponding Secretary, E. M. Gramm, M. D., Philadelphia.

Treasurer, Ella D. Goff, M. D., Allegheny.

Necrologist, W. F. Baker, M. D., Philadelphia.

Censor (to serve three years), Anna C. Clarke, M. D., Scranton.

Trustees (to serve three years) W. F. Edmundson, M. D., Pittsburg; I. B. Gilbert, M. D., Philadelphia; H. F. Schantz, M. D., Reading.

On motion a committee consisting of Drs. E. M. Gramm, M. M. Fleagle, Z. T. Miller, A. P. Bowie and C. M. Rhoads, was appointed to consider the place for holding the next meeting. The committee reported that it had been unable to come to a decision, but would recommend that Harrisburg or Gettysburg be selected for that purpose. After thorough discussion by the members of the society, the report was accepted and the committee discharged with the thanks of the society. On motion Harrisburg was unanimously selected for holding the meeting of the society in 1908.

On motion the thanks of the society were tendered to Dr. J. J. Tuller for the able and impartial manner in which he had presided over the deliberations of the society.

On motion a vote of thanks was given to the authorities of the

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Pittsburg Homœopathic Hospital for the courtesies extended to the society.

On motion a vote of thanks was given to the Allegheny Homœopathic Medical Society for the many hospitalities it had offered to the members and visitors of the State Society.

On motion a vote of thanks was given to the Associated Press and to the press of Pittsburg for the complete report of the proceedings of the meeting.

On motion a vote of thanks was tendered to Mr. A. R. Peacock for the use of his automobiles in taking the members and visitors to the points of interest in and about Pittsburg.

On motion of Dr. A. P. Bowie the names of Drs. Gaius J. Jones and J. Richey Horner, both of Cleveland, Ohio, were presented for election as honorary members. The matter was referred to the Board of Censors, under the By-Laws, for report at the meeting of 1908.

Following the presentation of the Report of the Section of Pædology, Dr. W. W. Van Baun presented the following resolution, which was unanimously adopted:

Resolved, That the Homœopathic Medical Society of the State of Pennsylvania heartily endorses the work of Dr. Winthrop Tisdale Talbot at Camp Asquam, Holderness, N. H., for the physical development of boys, and his researches to establish an exact, scientific, normal standard of development for children.

DELEGATES AND COMMITTEES.

Delegate to the American Institute of Homœopathy, Dr. H. S. Weaver; alternate, Dr. D. C. Kline.

Delegates to the Interstate Committee of the American Institute of Homœopathy (4 years), Drs. B. F. Betts and Aug. Korndœrfer, Sr.; alternates, Drs. J. B. McClelland and D. C. Kline.

Committee on Legislation (to serve 1906 and 1907), D. P. Maddux, M. D., Chairman; associates, Drs. J. D. Boileau, H. M. Bunting, T. H. Carmichael, Anna C. Clarke, Isaac Crowther, W. G. Dietz, E. M. Gramm, E. R. Gregg, T. M. Johnson, W. H. Keim, D. C. Kline, Aug. Korndœrfer, Sr., J. H. McClelland, R. P. Mercer, C. S. Middleton, S. B. Moon, G. B. Moreland, G. A. Mueller, E. C.

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Parsons, R. L. Piper, E. T. Prizer, F. J. Slough, W. B. Van Lennep, H. B. Ware, Julia G. Waylan.

Committee on Organization, Registration and Statistics, G. B. Mbreland, Chairman; associates, Drs. W. S. Bingaman, E. M. Gramm.

Committee on Publication, E. M. Gramm, M. D., Chairman; associates, Drs. Ella D. Goff, G. B. Moreland.

Press Committee, H. F. Schantz, M. D., Chairman; associates, Drs. G. B. Moreland, W. A. Stewart.

Membership Committee (one year), W. A. Seibert, M. D., Chairman; Drs. E. M. Gramm, H. F. Schantz; (two years), Drs. D. W. Straub, W. A. Stewart, C. W. Sample.

Committee on Hering Monument, C. P. Seip, M. D., Chairman; associates, Drs. B. F. Betts, A. P. Bowie, Edward Cranch, O. S. Haines, J. E. James, Sr., D. C. Kline, Aug. Korndœrfer, Sr., D. P. Maddux, W. J. Martin, J. B. McClelland, Charles Hohr, E. H. Morrow, W. A. Seibert, H. B. Ware.

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CHARTER OF THE HOMŒOPATHIC MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

To the Honorable, the Judges of the Court of Common Pleas of Philadelphia County, Pennsylvania:

In compliance with the requirements of an Act of the General Assembly of the Commonwealth of Pennsylvania, entitled "An Act to provide for the Incorporation and Regulation of Certain Corporations," approved the twenty-ninth day of April, A. D. 1874, and the supplements thereto, the undersigned, all of whom are citizens of Pennsylvania, having associated themselves together, with others hereinafter named, for the purpose hereinafter specified, and desiring that they may be incorporated according to law, do hereby certify:

First, The name of the proposed Corporation is The Homœopathic Medical Society of the State of Pennsylvania.

Second, The said Corporation is formed for the purpose of organizing the Homœopathic Medical Profession in the State of Pennsylvania and advancing Medical Sciences.

Third, The business of said Corporation is to be transacted in the City of Philadelphia.

Fourth, The said Corporation is to exist perpetually.

Fifth, The names and residences of the Corporators are as follows: William W. Van Baun, M. D., Philadelphia; John F. Cooper, M. D., Allegheny; Edward M. Gramm, M. D., Philadelphia; Z. T. Miller, M. D., Pittsburg; William B. Van Lennep, M. D., Philadelphia; Edward Cranch, M. D., Erie; Augustus Korndœrfer, Sr., M. D., Philadelphia; Alonzo P. Bowie, M. D., Uniontown; Clarence Bartlett, M. D., Philadelphia; Hugh Pitcairn, M. D., Harrisburg; Pemberton Dudley, M. D., Philadelphia; L. H. Willard, M. D., Allegheny; William C. Goodno, M. D., Philadelphia; Daniel P. Maddux, M. D., Chester; J. N. Mitchell, M. D., Philadelphia; Horace B. Ware, M. D., Scranton; William H. Keim, M. D., Philadelphia; W. A. Seibert, M. D., Easton; Charles M. Thomas, M. D., Philadelphia; J. H. McClelland, M. D., Pittsburg; John E. James, M.

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D., Philadelphia; Joseph E. Jones, M. D., West Chester; Isaac G. Smedley, M. D., Philadelphia; H. C. Chisolm, M. D., Huntingdon; T. H. Carmichael, M. D., Philadelphia, all of the State of Pennsylvania.

Sixth, The number of Trustees of said Corporation is fixed at nine, and the names and residences of those who are chosen as Trustees until the next annual election are as follows: William W. Van Baun, M. D., Philadelphia; John F. Cooper, M. D., Allegheny; E. M. Gramm, M. D., Philadelphia; Z. T. Miller, M. D., Pittsburg; William B. Van Lennep, M. D., Philadelphia; Edward Cranch, M. D., Erie; William H. Keim, M. D., Philadelphia; J. N. Mitchell, M. D., Philadelphia; Daniel P. Maddux, M. D., Chester.

Seventh. At the next annual election for Trustees of the Corporation three Trustees shall be elected to serve for the term of one year, three others to serve for the term of two years, and three others to serve for the term of three years, and thereafter annually three Trustees shall be elected to serve for the term of three years in the place of those whose terms expire.

Witness our hands and seals this third day of November, A. D. eighteen hundred and ninety-six.

WILLIAM W. VAN BAUN, M. D. [L. S.],
WILLIAM B. VAN LENNEP, M. D. [L. S.],
CLARENCE BARTLETT, M. D. [L. S.],
W. C. GOODNO, M. D. [L. S.],
J. NICHOLAS MITCHELL, M. D. [L. S.].

COMMONWEALTH OF PENNSYLVANIA, COUNTY OF PHILADELPHIA, *ss.*

Before me, the subscriber, a Notary Public for the Commonwealth of Pennsylvania, residing in the City of Philadelphia, personally appeared Wm. W. Van Baun, M. D., Wm. B. Van Lennep, M. D., and Clarence Bartlett, M. D., three of the subscribers of the above and foregoing certificate of incorporation of The Homœopathic Medical Society of the State of Pennsylvania, and in due form of law acknowledged the same to be their act and deed.

Witness my hand and official seal the third day of November, A. D. 1896.

[L. S.]

WINFIELD S. SHEARD,
Notary Public.

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IN THE COURT OF COMMON PLEAS FOR PHILADELPHIA COUNTY:

In the Matter of the Incorporation of The Homœopathic Medical Society of the State of Pennsylvania.

And now, to wit, this seventh day of December, A. D. 1896, the within Certificate of Incorporation having been on file in the Office of the Prothonotary of said Court since the twelfth day of November, A. D. 1896, on which publication of notice of intended application was first made, as appears from the entry thereon, and due proof of said publication having been presented to me, I do hereby certify that I have perused and examined said instrument and find the same to be in proper form and within the purposes named in the first class of Corporations specified in Section 2 of the Act of April 29, 1874, and that said purposes are lawful and not injurious to the community. It is, therefore, on motion of William C. Hannis, Esq., ordered and decreed that the said Charter be approved and is hereby approved and upon the recording of said Charter and its endorsements and this decree in the office of the Recorder of Deeds in and for said County, which is now hereby directed, the subscribers and their associates shall thenceforth be a Corporation for the purposes and upon the terms and under the name therein stated.

[L. S.] T. K. FINLETTER,
Judge.

Recorded in the Office for Recording Deeds, etc., in and for the City and County of Philadelphia in Charter Book No. 22, page 284, etc.

Witness my hand and Seal of Office this seventh day of December, A. D. 1896.

[L. S.] WM. GEARY,
Recorder of Deeds.

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By-Laws.

ARTICLE I.—TITLE.

This Corporation shall be known by the name and title of The Homœopathic Medical Society of the State of Pennsylvania.

ARTICLE II.—OBJECT.

The said Society is formed for the purpose of organizing the homœopathic medical profession in the State of Pennsylvania and advancing medical sciences.

ARTICLE III.—MEMBERSHIP.

SECTION 1. This Society shall be composed of active, honorary and corresponding members.

SEC. 2. A candidate for active membership shall present to the Board of Censors an application, signed by himself, certifying that he has received the degree of Doctor of Medicine from an incorporated medical college, that he subscribes to the doctrine of *Similia Similibus Curentur*, and that he sustains a good moral character—these statements to be vouched for by two members of the Society in good standing. If found qualified, he may be elected a member. He shall not, however, be considered a member until he has paid the first year's dues and signed the Constitution, either in person or by proxy. An active member removing from the State, wishing to retain his membership, shall notify the Corresponding Secretary to that effect, otherwise the Corresponding Secretary shall drop his name from the roll. Any active member who shall be three years in arrears for dues shall forfeit his membership, and he shall not be reinstated until all arrearages shall have been paid. Membership shall also be forfeited by vote of the Society if a member fails to attend the meetings of the Society or present a paper once in five years. Any active member who shall be unable to comply with the requirements of this Society may be continued as an active member, without the payment of dues, by vote of the Society.

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SEC. 3. Any Homœopathic physician, not a resident of Pennsylvania, who may be judged worthy, may, by a two-thirds vote of the members present, be elected an honorary member at any annual meeting; provided, that the proposal for honorary membership shall have been made at a previous annual meeting, and said proposal been approved by the Board of Censors, but no more than two shall be elected in one year. Honorary members shall have all the privileges of membership except the right to vote and to hold office, and shall be exempt from dues.

SEC. 4. Any Homœopathic physician residing outside of the United States may be elected a corresponding member by a vote of two-thirds of the members present at any annual meeting, but not more than two shall be elected in one year. Corresponding members shall have all the privileges of membership except the right to vote and to hold office, and shall be exempt from dues.

ARTICLE IV.—OFFICERS.

SECTION 1. The officers of this Society shall be a President, a First Vice-President, a Second Vice-President, a Recording Secretary, a Corresponding Secretary, a Treasurer, a Necrologist, a Board of Trustees consisting of nine members, and a Board of Censors consisting of three members.

SEC. 2. The nomination for officers of the Society shall be the special order of business for 11 o'clock on the morning of the second day of the annual meeting. The officers shall be elected by ballot, the election to be the special order of business for 11 o'clock on the morning of the third day of the annual meeting. The candidate receiving a majority of the votes cast shall be declared elected. The officers elected shall enter upon their respective duties on the first day of January next succeeding their election, to serve for the term of one year, or until their successors are elected, except as hereinafter provided.

SEC. 3. The Board of Trustees shall serve for a term of three years, three members to be elected annually. No member of the Board of Trustees shall be eligible to serve two terms in succession.

SEC. 4. The Censors shall be elected to serve for three years, one member to be elected annually.

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ARTICLE V.—Duties of Officers.

Section 1. The President shall preside at all meetings of the Society. He shall preserve order, appoint all committees unless otherwise directed, and discharge all other duties usually pertaining to a presiding officer, in accordance with the provisions of the Charter and these By-Laws. He shall be, *ex officio,* a member of all standing committees of the Society, and Chairman of the Board of Trustees. He shall not be eligible to office two terms in succession. On assuming office it shall be his duty to appoint a Chairman of each of the Sections designated in Article VIII., Section 1, and the Chairman, in conjunction with the President, shall select his associates.

Sec. 2. The Vice-Presidents, in the order of their election, shall perform the duties of the President in his absence.

Sec. 3. The Recording Secretary shall keep correct minutes of the proceedings of the Society, and, when approved, transcribe them in a book kept for that purpose. He shall have charge of the minute-book, all papers, documents, etc., belonging to the Society, other than those pertaining to the Treasurer, the Trustees, or the Committee on Publication, and shall keep them during the intervals of the meetings of the Society. Within twenty-one days after adjournment he shall furnish the Committee on Publication with a correct copy of the minutes for publication in the Transactions, countersign orders upon the Treasurer in accordance with the By-Laws, and shall perform such other duties pertaining to his office as may from time to time be required. He shall be, *ex officio,* Chairman of the Committee on Organization, Registration and Statistics.

Sec. 4. The Corresponding Secretary shall preserve all letters received by the Society, conduct such correspondence as shall tend to advance its interests, prepare the order of business for the annual session of the Society, give at least two weeks' notice of all meetings, keep a record of all members, with the date of admission of each, present all communications to the Society, notify all committees of their appointment and of the business referred to them, and notify all members of their election. He shall be, *ex officio,* Chairman of the Committee on Publication.

Sec. 5. The Treasurer shall hold the evidence of all property belonging to The Homœopathic Medical Society of the State of Pennsylvania, receive all moneys intended for the Treasury of the So-

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ciety, and deposit the same in the name of The Homœopathic Medical Society of the State of Pennsylvania as shall be directed by the Board of Trustees, make no payments except on orders drawn in accordance with the By-Laws, keep a full account of receipts and expenditures, which shall at all times be open to the inspection of the Board of Trustees, make a report to the Society in writing at each annual meeting, and, whenever required, of the state of his accounts and the condition of the Treasury, and shall annually notify all members of their arrearages.

SEC. 6. The Necrologist, upon the death of a member of the Society shall prepare a suitable obituary and present it to the Society at its annual meeting.

SEC. 7. The Trustees shall have general supervision of the business of the Society, hold at least one meeting every year, and make a report at the annual session of the Society. The Trustees shall have the power to disburse all money belonging to the Society. No money shall be paid from the treasury except upon a written order, drawn on the Treasurer and countersigned by the Chairman and Secretary of the Board of Trustees.

The Trustees, acting as the Judicial Council, shall take cognizance of, and decide upon all questions of an ethical or judicial character. All questions of a personal character shall be referred at once, without discussion, to the Judicial Council. Every decision of the Council shall be in writing, signed by a majority of the members present, be reported to this Society at the earliest practical moment, and shall be final. The Council shall preserve permanent records of all its proceedings.

SEC. 8. The Censors shall examine the credentials of candidates for membership, and report to the Society for election those who may be found qualified. They may report in the regular order of business or at the close of the report of any bureau.

ARTICLE VI.—MEETINGS.

SECTION 1. The annual meeting shall be held in the month of September, on the days and at the place decided upon at the annual meeting next preceding; an invitation to hold the annual meeting in any locality shall be considered only when extended by a regularly organized society.

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SEC. 2. Nine members shall constitute a quorum for the transaction of the ordinary business of the Society; but for scientific or literary purposes, unless an actual count be called for, a quorum shall always be presumed. For amending the By-Laws, twenty members shall constitute a quorum.

SEC. 3. The Board of Trustees shall have power to direct such other meetings as it may judge advisable.

SEC. 4. Should occasion arise making it necessary to change the time and place of meeting agreed upon at the previous annual session, the same may be done by a vote of the Board of Trustees.

ARTICLE VII.—DUES.

SECTION 1. Active members shall pay the sum of five dollars upon their election.

SEC. 2. Active members shall pay annually, in advance, the sum of three dollars toward defraying the expenses of the Society. Any member who shall fail to pay his annual dues for three successive years shall be dropped from the roll of members, after having been notified by the Corresponding Secretary of the forfeiture of his membership. The published proceedings of the Society will be furnished only to those members who are not in arrears for dues.

ARTICLE VIII.—SECTIONS.

SECTION 1. The following Sections shall be appointed as hereinafter provided:

Gynæcology.
Homœopathic Institutes and Clinical Medicine.
Materia Medica and Provings.
Obstetrics.
Ophthalmology, Otology and Laryngology.
Pædology.
Pathology and Pathological Anatomy.
Sanitary Science.
Surgery.

SEC. 2. Each Section shall be composed of not less than five members, and no member shall be placed on more than one Section.

SEC. 3. The Sections shall report in order of rotation each succeeding year, except the Section of Materia Medica, whose report

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shall be a special order of business at the opening of the afternoon session of the second day of the Society meeting.

SEC. 4. If a member of a Section shall resign or decline to serve, the Chairman of the Section shall fill the vacancy and notify the Corresponding Secretary of his action.

ARTICLE IX.—STANDING COMMITTEES.

The following Committees shall be appointed by the President on assuming office:

A Committee on Legislation which shall serve two years, of at least nine members, to be appointed by the President in alternate years, whose duty it shall be to give special attention to all legislation involving the interests of the Society.

A Committee on Organization, Registration and Statistics, of at least three members, to be appointed by the President, of which the Recording Secretary shall be Chairman. It shall receive all credentials of delegates to the Society; receive and preserve reports from local and State societies, colleges and other institutions; keep a record of the number of members admitted and withdrawn from the Society, and perform such other duties as may be directed by the Society. From these data the annual report of the Committee shall be prepared.

A Publication Committee, consisting of the Treasurer, Recording Secretary and Corresponding Secretary, the latter being Chairman; but the numbebr of its members may be increased at the discretion of the Society. It shall be the duty of the Committee within six months from the date of the annual meeting to publish and issue the Transactions to all who are entitled to receive them, unless otherwise directed by the Society.

A Committee on Membership and Organization to consist of six members who shall serve for two years, three members to be appointed each year. It shall be the duty of this Committee to aid in obtaining new members for the Society; to urge attendance at the annual meetings, and to promote the organization of county and other local societies, so that fraternal and close professional relationship of the members of the Homœopathic medical profession may be furthered.

A Committee delegated to serve on the Interstate Committee of

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the American Institute of Homœopathy to consist of two members of this Society who sha'l also be members of the American Institute of Homœopathy, to serve for a term of four years; and two alternates who shall a'so serve four years, and who shall be members of this Society and of the American Institute of Homœopathy.

ARTICLE X.—Papers and Discussions.

Section 1. Each paper presented to this Society shall be through its appropriate Section. All papers to be presented by any Section shall be in the hands of the Chairman thereof at the opening of the session. All papers shall be subject to the approval and revision of the Publication Committee. No paper will be received by the Society in an incomplete condition, and no paper will be published as part of the Transactions which has been published previous to its presentation to this Society. No paper shall occupy more than fifteen minutes in the reading, unless the time be extended by an affirmative three-fourths' vote of the members of the Society present. In the absence of the author of a paper the Chairman of its appropriate Section may request any member of the Society present to read the same or it shall be read at the request of five members. Any paper may be published in a medical journal subsequent to its presentation to the Society, provided that the original be retained in the custody of the Publication Committee.

All communications read before the Society shall become its property.

Sec. 2. The discussion shall follow the reading of each paper, unless otherwise ordered by the Society. All discussions shall be confined to the subject of the paper or report. No member shall speak more than twice on the same subject, except by vote of the Society, and each speaker shall be limited to a speech of ten minutes, and to one of five minutes if he speaks a second time. No excess of time shall be allowed, except by consent of the Society. The reader of the paper shall be allowed ten minutes at the close of the discussion.

ARTICLE XI.—Seal.

The Society shall have and use one common seal. The Corresponding Secretary shall be the custodian of the seal.

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ARTICLE XII.—Senior Members.

Members of the Society who shall have maintained twenty-one years of consecutive membership shall be Senior Members, and their names shall be printed in capital letters in the list of members in the Transactons.

ARTICLE XIII.—Code of Ethics.

Section 1. The Code of Ethics of the American Institute of Homœopathy is adopted by this Society for its guidance.

Sec. 2. All complaints of violation of the Code of Ethics shall be referred to the Judicial Council, and the decision of the Council shall be final.

ARTICLE XIV.—Minutes.

The reading of the minutes for approval and record shall be the first order of business at the morning meetings of the Society, and at the close of the final session.

ARTICLE XV.—Amendments.

These By-Laws may be altered or amended by a vote of two-thirds of the members present at any annual meeting; *provided,* that notice of such proposed alteration or amendment shall have been given to the Society in writing at the annual meeting next preceding, and notice of such proposed alteration or amendment shall appear in the call for the meeting at which it is to be acted upon.

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CODE OF MEDICAL ETHICS

OF THE

AMERICAN INSTITUTE OF HOMŒOPATHY

(ADOPTED IN 1893.)

SCOPE.

The scope of a Code of Medical Ethics comprises the reciprocal duties and obligations of physicians and patients; the duties and obligations of physicians to each other; and the reciprocal duties and obligations of physicians and the public.

FUNDAMENTAL PRINCIPLES.

The great principles upon which Medical Ethics are based are these:

1. The great end and object of the physician's efforts should be: "The greatest good to the patient."

2. The rule of conduct of physician and patient, and of physicians toward each other, should be the GOLDEN RULE: "As ye would that men should do to you, do ye also to them, likewise."

The various articles of the Code are only special applications of these great principles.

PART I.

RECIPROCAL DUTIES AND OBLIGATIONS OF PHYSICIANS AND PATIENTS.

Article I. DUTIES OF PHYSICIANS TO PATIENTS.
" II. DUTIES OF PATIENTS TO THEIR PHYSICIANS.

PART II.

DUTIES AND OBLIGATIONS OF PHYSICIANS TO EACH OTHER.

Article I. DUTIES AS MEMBERS OF THE MEDICAL PROFESSION.
" II. PROFESSIONAL SERVICES TO EACH OTHER.

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" III. Vicarious Services.
" IV. In Regard to Consultation.
" V. In Cases of Interference.
" VI. Differences Between Physicians.
" VII. Concerning Pecuniary Obligation.

PART III.

RECIPROCAL DUTIES AND OBLIGATIONS OF PHYSICIANS AND THE PUBLIC.

Article I. Duties of the Profession to the Public.
" II. Obligations of the Public to Physicians.

PART I.

OF THE RECIPROCAL DUTIES AND OBLIGATIONS OF PHYSICIANS AND THEIR PATIENTS.

Article I.—Duties of the Physician to the Patient.

Section 1. The physician should hold himself in constant readiness to obey the calls of the sick. He should bear in mind the sacred character of his calling and the great responsibility which it involves, and should remember that the comfort, the health and the lives of his patients depend upon the skill, attention and faithfulness with which he performs his professional duties.

Section 2. The physician, in order that he may be able to exercise his vocation to the best advantage of the patient, should possess his respect and confidence. These must be acquired and retained by faithful attention to his malady, by indulgent tenderness toward the weaknesses incident to his condition, and by the exercise of a firm but kindly authority. The physician is bound to keep secret whatever he may either hear or observe while in the discharge of his professional duties, respecting the private affairs of the patient or his family. And this obligation is not limited to the period during which

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the physician is in attendance on the patient. The patient should be made to feel that he has, in his physician, a friend who will guard his secrets with scrupulous honor and fidelity.

SECTION 3. The physician should visit his patient as often as may be necessary to enable him to acquire and keep a full knowledge of the nature, progress, changes and complications of the disease, and to do for the patient the utmost of good that he is able. But he should carefully avoid making unnecessary visits lest he render the patient needlessly anxious about his case, or expose himself to the charge of being actuated by mercenary motives.

SECTION 4. The physician should not give expression to gloomy forebodings respecting the patient's diseases, nor magnify the gravity of the case. Bearing in mind the almost infinite resources of nature, he should be cheerful and hopeful, both in mind and manner. This will enable him the better to exercise his faculties and apply his knowledge for the patient's benefit, and will inspire the patient with confidence, courage and fortitude, which are the physician's best moral adjuvants.

But it is the physician's duty to state the true nature and prospects of the case, from time to time, to some judicious friend or relative of the patient, and to keep this person fully informed of its changes and probable issue; and if the patient himself request the physician to disclose to him the nature and prognosis of his disease, it is his duty to state tenderly, but frankly, the whole truth—provided the patient be of sound mind and strong enough to receive the disclosure without serious injury. The patient has a right to know the truth. If, moreover, facts within the physician's knowledge lead him to believe that it is of great importance in relation to the patient's affairs, that he should be warned of the approach of death, it is the physician's duty to reveal to the patient's nearest friend, or to the patient himself, the true state of the case, and the importance of timely action.

SECTION 5. Whether the case proceed favorably, or become manifestly incurable, it is the physician's duty to continue his attendance faithfully and conscientiously so long as the patient may desire it. He is not justified in abandoning a case merely because he supposes it incurable.

SECTION 6. As the patient has an undoubted right to dismiss his physician for reasons satisfactory to himself, so likewise, the physi-

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cian may, with equal propriety, decline to attend patients, when his self-respect or dignity seem to him to require this step; as, for example, when they persistently refuse to comply with his directions.

SECTION 7. In difficult or protracted cases consultations are advisable. They tend to increase the knowledge, energy and confidence of the physician, and to maintain the courage of the patient. The physician should be ready to act upon any desire which the patient may express for a consultation, even though he may not himself feel the need of it. Nothing is so likely to maintain the patient's confidence as alacrity in this respect. Moreover, such a course is but just to him, for he has an indisputable right to whatever aid or counsel he may think likely to be of service to him.

SECTION 8. The intimate relations into which the physician is brought with his patient give him opportunity to exercise a powerful moral influence over him. This should always be exerted to turn him from dangerous or vicious courses towards a temperate and virtuous life. The physician is sometimes called to assist in practices of questionable propriety, and even of a criminal character. Among these may be mentioned the pretence of disease, in order to evade services demanded by law, as jury or military duty; the concealment of organic disease or of morbid tendencies, in order to secure favorable rates of life insurance, or for deception of other kinds; and especially the procurement of abortion when not necessary to save the life of the mother. To all such propositions, the physician should present an inflexible opposition. It is his duty, in an authoritative, but friendly manner, to explain and urge the nature, illegality and guilt of the proposed action, and to use every effort to dissuade from it, and to strengthen the patient's virtue and sense of right. The physician should be aware of the frequency of criminal abortion, and of the different methods employed for it, and should take every occasion to warn those who may be tempted to resort to it. In no case should the physician induce abortion, or premature labor, without a previous consultation, with the most experienced practitioners obtainable, nor without the most clear and imperative reasons.

Article II.—Duties and Obligations of Patients to Their Physicians.

SECTION 1. Physicians are required, by the nature of their profession, to sacrifice comfort, ease and even health, for the sake of

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their patients. Patients should reflect upon this, and should understand and remember that they have corresponding duties and obligations towards their physicians.

SECTION 2. The patient should select a physician in whose knowledge, skill and fidelity he can place implicit confidence; whose habits of life are regular and temperate, and whose character and demeanor are such that he can regard him as a personal friend.. He must be able to confide in him freely. And the physician should not be changed for light reasons. A physician thoroughly acquainted with the constitution, temperament and tendencies of a family can the more successfully treat them.

SECTION 3. The patient should always consult his physician as early as possible after he has discovered that he is ill. A disease which is trifling at its onset may grow formidable through neglect. The physician should be regarded as a confidential adviser, who, on being early consulted, may prevent a sickness.

SECTION 4. The patient should faithfully and unreservedly state to his physician the supposed cause of his malady, and tell him everything that may have a bearing upon its nature. Since the physician is under the strongest obligations to secrecy, the patient should not allow considerations of delicacy, modesty or pride to prevent an entirely frank statement of his case, and candid and full replies to interrogatories.

SECTION 5. The patient should implicitly obey his physician's injunctions as regards diet, regimen and medical treatment. If he deviate from these directions, he cannot hold the physician to a full responsibility in the case; and, further, by a partial obedience he incurs some personal risk, since, in the treatment of diseases, all parts of the physician's advice are made to harmonize, and each is dependent on the others and may be unsafe without the coincidence of the others. Moreover, he does the physician an undeserved, and often a serious, wrong. If the patient have not sufficient confidence in his physician, and respect for him, to follow his directions, it were better for him to frankly say so, and to employ another in whom he can confide.

The patient should never allow himself, while under a physician's treatment, to take other medicines than those prescribed by him. He would, by so doing, incur a serious risk of taking medicines that are

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incompatible with eath other. If desirous of trying any other mode of treatment it would be much better frankly to state the fact to his physician and ask his advice.

SECTION 6. The patient should, if possible, avoid receiving the friendly visit of a physician other than the one under whose charge he is. When he receives such visits he should avoid conversation on the subject of his disease, for an accidental observation might give him false impressions respecting his disease or destroy his confidence in the treatment he is pursuing. He should never send for a consulting physician without the express consent of his own medical attendant, for physicians can act together for the advantage of their patient only when they act harmoniously. Nor should he, by a secret appointment, constrain his medical attendant to meet another physician with whom he might not be willing to consult; but the patient has an undoubted right to have the opinion of any physician whom he may desire upon his case. His proper course is to request his medical attendant to arrange a consultation and frankly state his desire for the physician whom he may prefer. If his medical attendant decline the consultation it is then for the patient to determine whether he will insist and thus dismiss his medical attendant, or whether he will defer to the judgment of his own physician. And the patient has a right thus to choose.

SECTION 7. If the patient wishes to dismiss his physician he should, in justice and in common courtesy, state his reasons, and, if possible in a friendly manner. To dispense with the service of a physician need not, of necessity, change the social relations of the parties.

SECTION 8. The patient should, when practicable, send for the physician in the morning, before his usual hour for leaving home. He will, by so doing, secure his earlier attendance, and will enable him the better to apportion his time so as to do justice to all his calls and engagements. He should call on his physician during his office hours only, and should avoid disturbing him in hours devoted to meals, rest and sleep. And in receiving his physician's visits he should avoid compelling him to wait, even a few minutes. The aggregate of petty detentions, while the patient is making some needless preparation to receive the physician, amount to a serious waste of valuable time.

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PART II.

OF THE DUTIES AND OBLIGATIONS OF PHYSICIANS TO THE PROFESSION AND TO EACH OTHER.

Article I.—Duties to the Profession.

SECTION 1. Inasmuch as every member of the medical profession partakes of the honor in which it is held, and is entitled to its privileges and immunities and profits by the scientific labors of his predecessors and associates, it is his duty faithfully to endeavor, in his turn, to elevate the position of the profession and, by every honorable exertion, to enrich the science of medicine.

SECTION 2. In no other profession should a higher standard of morality and greater purity of personal character be required. Physicians ought to come up to this standard and do what they may to exalt it. As the practice of medicine requires constant exercise of a vigorous and clear understanding, and as the practitioner should be, at all times, ready for emergencies in which the welfare and even the life of a fellow-creature may depend upon his steady hand, acute eye, and unclouded brain, it is incumbent upon the physician to be temperate in all things.

SECTION 3. The physician should not resort to public advertisements or private cards or handbills, inviting the attention of persons affected by particular diseases or publicly offering advice and medicine to the poor *gratis*, or promising radical cures. Neither should he publish cases of operations in the daily prints, nor invite laymen to be present at operations, nor solicit or exhibit certificates of skill and success, nor perform any similar act.

SECTION 4. It is equally derogatory to professional character for a physician to hold a patent for any nostrum or any surgical instrument or appliance, or to keep secret the nature or composition of any medicine used by him. Such restriction or concealment is inconsistent with the beneficence and liberality which should characterize the medical profession. But it is the duty of the physician to avail himself of every opportunity to observe the action and study the properties of new or secret remedies and new processes of preparing medicines as well as new modes of treating diseases, and to sub-

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ject them to the analysis of scientific investigation. For the physician should always bear in mind that the great object of his profession is to cure the sick, and that it is not only admissible, but it is his solemn duty to investigate thoroughly and without prejudice whatever offers any probability of adding to his knowledge of the art and means of curing and of thus enriching the science of medicine.

Article II.—Professional Services of Physicians to Each Other.

SECTION 1. All practitioners of medicine, their wives and children, while under the paternal care, are entitled to the gratuitous services or any one or more of the faculty residing near them. Physicians, when ill, are incompetent to prescribe for themselves. The natural anxiety and solicitude which they feel for members of their own family when ill tend to obscure their professional judgment and make it difficult to treat them. Under these circumstances physicians are peculiarly dependent on each other, ano kind offices and professional aid should always be cheerfully and gratuitously afforded. But visits should not be obtruded officiously or unasked upon a sick physician.

If, however, a physician in affluent circumstances, request the attendance of a distant professional brother and offer an *honorarium*, it is not proper to decline it, for one should not, even from a kindly motive, impose upon another a pecuniary obligation which the recipient would not wish to incur.

If a physician is called from any considerable distance the expense of travel, etc., thereby incurred should always be paid by the physician receiving the visit, and an *honorarium* may be tendered if time is consumed in making the visit.

Article III.—Duties of Physicians as Regards Vicarious Offices.

SECTION 1. Attention to his personal affairs, the pursuit of health and the various contingencies to which the physician is peculiarly exposed, sometimes compel him temporarily to withdraw from his duties to his patients and to request some of his professional brethren to discharge them for him. Compliance with such a request is

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an act of courtesy which should always be performed with the utmost consideration for the interests and character of the physician relieved. And when this is done for a short period only all the pecuniary obligations for such services should belong to him. But if a physician neglect his business in quest of amusement and pleasure he is not entitled to the frequent and long-continued exercise of this fraternal courtesy without conceding to the physician who acts for him the fees accruing from the duties discharged by the latter.

SECTION 2. Obsterical and surgical cases involve unusual fatigue and responsibility, and it is just that the fees accruing therefrom should belong to the physician who attends them.

Article IV.—Duties of Physicians in Regard to Consultations.

SECTION 1. A complete medical education, of which the diploma of a medical college is the formal voucher, furnishes the only presumptive evidence of the professional acquirements and abilities. But the annals of the profession contain the names of some who, not having the advantage of a complete medical education, became, nevertheless, through their own exertions and abilities, brilliant scholars and successful practitioners. A practitioner, therefore, whatever his credentials may be, who enjoys a good moral and professional standing in the community, should not be excluded from fellowship, nor his aid rejected, when it is desired by the patient in consultation. No difference in views on subjects of medical principles or practice should be allowed to influence a physician against consenting to a consultation with a fellow practitioner. The very object of a consultation is to bring together those who may, perhaps, differ in their views of the disease and its appropriate treatment, in the hope that, from a comparison of different views, may be derived a just estimate of the disease and a sucessful course of treatment.

No tests of orthodoxy in medical practice should be applied to limit the freedom of consultations. Medicine is a progressive science. Its history shows that what is heresy in one century may and probably will be orthodoxy in the next. No greater misfortune can befall the medical profession than the action of an influential association or academy establishing a creed or standard of orthodoxy or

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"regularity." It will be fatal to freedom and progress in opinion and practice. On the other hand, nothing will so stimulate the healthy growth of the profession, both in scientific strength and in the honorable estimation of the public, as the universal and sincere adoption of a platform which shall recognize and guarantee:

1. A truly fraternal good will and fellowship among all who devote themselves to the care of the sick.

2. A thorough and complete knowledge, however obtained, of all the direct and collateral branches of medical science—as it exists in all sects and schools of medicine—as the essential qualification of a physician.

3. Perfect freedom of opinion and practice, as the unquestionable prerogative of the practitioner, who is the sole judge of what is the best mode of treatment in each case of sickness intrusted to his care.

The physician may, with propriety, decline to meet a practitioner of whose inimical feelings toward himself or of whose general unfairness in consultations he is satisfied. But in such a case he should explain to the patient his reasons; and if the patient desire the opinion of the practitioner objected to the family physician may withdraw from the case and allow the other to be sent for. But in justice to the latter the state of affairs should be explained to him at the time he is requested to visit the patient.

SECTION 2. The utmost punctuality should be observed in the visits of physicians when they are to hold consultations together; and this is generally practicable, for society allows the plea of professional engagements to excuse the neglect of all others, and to be a valid reason for the relinquishment of any present occupation. But as professional engagements may sometimes interfere and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period of time, after which the consultation should be considered postponed to a new appointment. If it be the attending physician who is present he will, of course, see the patient and prescribe; but if it be the consulting physician he should retire without seeing the patient, except in case of emergency, or when he has been called from a considerable distance, in which case he may examine the patient and give his opinion in writing and under seal, to be delivered to the attending physician.

SECTION 3. In consultations no rivalry or jealousy should be in-

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dulged in. Candor, probity and all due respect should be exercised toward the physician in charge of the case. If the consulting physician cannot agree with him respecting the nature and proper treatment of the case the physician should state this fact to the patient or his nearest friend, both physicians being present at the time, and should request him to select the one in whom he has most confidence. But if they agree sufficiently to take joint charge of the case, then the consulting physician must justify and uphold, so far as he can conscientiously do so, the practice of his associate, and must abstain from any hints, insinuations or actions which might in any way impair the confidence which the patient reposes in him, or affect his reputation. He must refrain from any extraordinary attentions or assiduities calculated to ingratiate himself in the patient's favor and to supplant his associate.

SECTION 4. In consultations the attending physician should first put the necessary questions to the patient. After this the consulting physician should make such additional inquiries and examinations as may be needed to satisfy him of the true nature of the case. But he should avoid making a parade of examining the patient more thoroughly than had been done before, rather suggesting to the attending physician wherever is possible, to make whatever examinations he desires, than making them himself. Both physicians should then retire to a private room for deliberation.

SECTION 5. In consultations the attending physician should deliver his opinion first; and, when there are several consulting physicians, they should express their opinions in the order in which they have been called in. Should an irreconcilable diversity of opinion occur, when more than two physicians meet in consultation, the opinion of the majority should be regarded as decisive; but, if the number be equal on each side, the decision should rest with the attending physician. If two physicians, in consultation, cannot agree they should call in a third to act as umpire. If this be not practicable the patient must be requested to select the physician in whom he is most willing to confide. The physician who is left in the minority should, without any ill-feeling, retire from the consultation and from any further participation in the management of the case; and, in justice to the physician thus retiring, the fact of his difference from his associates should, in the presence of all the

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physicians attending, be explained to the patient as his reason for withdrawing from the case.

SECTION 6. The attending physician should communicate to the patient or his friends the directions agreed upon in the consultation, as well as any opinion which it may be thought proper to express. But no statement or discussion should take place before the patient or his friends, except in the presence of all physicians attending, and by their common consent. And no opinions or prognostications should be delivered which are not the result of previous deliberation and concurrence. No decision arrived at in a consultation is to be regarded as restraining the attending physician from making such variations in the treatment as any subsequent change in the case may demand. But such variation, and the reason for it, ought to be carefully noted at the time, and detailed at the next meeting in consultation. The same privilege belongs also to the consulting physician, if he is sent for in an emergency when the attending physician is out of the way; and similar explanations must be made by him at the next meeting.

SECTION 7. Sometimes a special consultation is desirable in cases in which the continued attendance of two physicians might be objectionable to the patient. The consulting physician, in such a case, shou'd sedulously avoid all further unsolicited attendance. Such consultations require an extraordinary outlay of time and attention, and at least a *double honorarium* may be reasonably expected.

SECTION 8. The consulting physician cannot, with propriety, take exclusive charge at any time of the patient in whose case he has been called in consultation without the consent of the attending physician, except in cases provided for by the third sentence of section 3 and by the fourth sentence of section 5, of this article.

Article V.—Duties of Physicians in Cases of Interference.

SECTION 1. Medicine is a liberal profession, and those admitted into its ranks should base their expectations of success upon the extent of their qualifications, not upon intrigue or artifice. A physician should not allow himself to feel envious or jealous of a brother practitioner. The distinction which one successful physician wins is shared by the whole profession. Nor should a physician suffer himself to feel ill-will towards another who may come into his neighborhood and appears likely to take a share of the busi-

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ness which he has hitherto enjoyed. Such feelings are inconsistent with the beneficent and liberal nature of the profession. Liberality and true generous fraternity in thought, word and deed will unite the interests of all the members of the profession, and will so exalt the estimation in which it is held in the community that, confidence being increased, business will likewise increase; and to physicians will be acorded the position which, of right, should be theirs, that of confidential family advisers in all matters pertaining to the care of the body in health no less than in sickness.

SECTION 2. The physician, in his intercourse with a patient who is under the care of another practitioner, should observe the strictest caution and reserve. No meddling questions should be asked in any interview for business or friendship, no disingenuous hints thrown out relating to the nature and treatment of his disorder; nor should the patient be allowed to converse upon these topics. No course of conduct should be pursued which might, directly or indirectly, tend to diminish the trust reposed in the physician employed.

SECTION 3. A physician should not take charge of a patient who is, or has recently been, under the charge of another practitioner in the same illness, except in cases of sudden emergency, or in consultation with the physician previously in attendance, or when the latter has relinquished the case, or has been regularly notified that his services are no longer required. Under such circumstances no unjust or illiberal remarks should be made or insinuations thrown out in relation to the treatment pursued by the previous physician. Nor should the physician permit the patient unreasonably to find fault with his predecessor, for patients often become dissatisfied with their attention on account of the mere duration of a case which no degree of professional knowledge or skill could have shortened.

SECTION 4. In cases of accident or sudden emergency one or more physicians are often sent for by alarmed friends. Courtesy should assign the patient to the first of these that arrives; and he should select from those present such additional assistance as he may deem necessary. But he should also request the family physician (if there be one) to be sent for, and on his arrival, resign the case into his hands. The practitioner of the patient, when he arrives should take the place of any one called in his absence. "The practitioner of any patient" is the man whom he has in any way

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given to understand that he regards him as his medical adviser, or who would now be in charge of the case were it not for his absence sickness or other disability.

SECTION 5. In a sparse population, a physician, when visiting a sick person, may be desired to see, in an emergency, a neighboring patient, who is under the regular charge of another physician. The conduct to be pursued on such an occasion is to give advice adapted to present circumstances; to interfere as little as possible with the general plan of treatment; to assume no farther direction of the case unless it be expressly desired; and, in the latter case to request an immediate consultation with the practitioner previously employed.

SECTION 6. A wealthy physician should not give advice *gratis* to the affluent, because his so doing is an injury to his professional brethren. The office of the physician can never be suported as an exclusively beneficent one, and it is defrauding, in some degree, the common fund when fees are dispensed with which might justly be claimed.

SECTION 7. When a physician who has been engaged to attend a case of midwifery is absent, and another is sent for, if delivery is accomplished in the absence of the former, the latter is entitled to the fee, but he should resign the patient to the practitioner first engaged.

Article VI.—Of Differences Between Physicians.

SECTION 1. Diversity of opinion and opposition of interests may, in the medical, as in other professions, sometimes occasion controversy and even contention. When such cases occur and cannot be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians or a *court medical.*

Article VII.—Of Pecuniary Acknowledgments.

SECTION 1. Some general rules should be adopted by the physicians in every town or district relative to pecuniary acknowledgments from patients. These should be adhered to by physicians as uniformly as circumstances will permit. They serve, likewise, as a standard to which appeal may be taken in cases of doubt or dispute.

SECTION 2. Members of the medical profession have been so uniformly in the habit of attending, gratuitously, the indigent sick, and, in general, of answering every call promptly and without a question

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as to whether they are to receive remuneration therefor, that many persons seem to think they have a right to demand the service of physicians, and do, in fact, call upon them freely, and neglect or refuse to render any pecuniary equivalent, although abundantly able to do so. They impose upon one physician in this way until they have exhausted his patience, and then call upon another; and thus, in the course of a few years, make the circuit of the profession in their neighborhood. It is proper for the physicians of a community to make a list of the names of such individuals, and to demand, before visiting those whose names are on it, adequate security that their *honorarium* will be paid.

PART III.

THE RECIPROCAL DUTIES AND OBLIGATIONS OF PHYSICIANS AND THE PUBLIC.

Article I.—Duties of Physicians to the Public.

SECTION 1. As good citizens, it is the duty of physicians to be vigilant for the welfare of the community and to bear their part in sustaining its institutions and burdens. They should be always ready to give counsel to the public in relation to matters appertaining to their *profession*, as, for example, on subjects of medical police, public hygiene and legal medicine. It is their province to enlighten the public in regard to quarantine regulations, the location, arrangements and dietaries of hospitals, asylums, schools, prisons and similar institutions; in relation to the medical police of towns, drainage, ventilation, etc., and in regard to measures for the prevention of epidemic and contagious diseases. And, when pestilence prevails it is their duty to face the danger and to continue their labors for the alleviation of suffering and the saving of life, even at the risk of their own lives.

SECTION 2. Physicians should always be ready, when called on by the proper authorities, to enlighten coroners' inquests and courts of justice on matters strictly medical, such as involve questions relating to insanity, legitimacy, or sudden and violent deaths, and in regard to the various other subjects embraced in the science of medi-

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cal jurisprudence. But, in these cases, and especially where they are required to make post-mortem examinations, it is just and right, in consequence of the time, labor and skill required and the responsibility and risk they incur, that the public should award them more than a mere consulting fee.

SECTION 3. There is no profession, by the members of which eleemosynary services are more freely dispensed than they are by physicians; but justice demands that some limits should be placed to the claims upon such offices at their hands. Poverty, professional brotherhood, the benevolent and scantily remunerated occupation of the individual patient, and certain of the public duties referred to in Section 1 of this Article, should always be recognized as presenting valid claims for gratuitous services. But neither institutions endowed by the public or by rich individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to serve on juries, or perform military duty, or to certify to the state of health of parties wishing to insure their lives, obtain pensions or the like, without a pecuniary acknowledgment. But to indigent persons such professional services should always be cheerfully and freely accorded.

Article II.—Obligations of the Public to Physicians.

SECTION 1. The benefit accruing to the public, directly and indirectly, from the active and constant labors and beneficence of the medical profession are so numerous and important that physicians are justly entitled to the utmost consideration from the community. The public ought, likewise, to entertain a just appreciation of the proper qualifications of a practitioner of medicine; to make a due discrimination between true science and the assumptions of ignorance and empiricism; to afford every encouragement and facility for the acquisition of medical education, and not to allow the provisions of their statute books or of the prospectus of their chartered institutions to interpose any obstacles to the attainment of the fullest knowledge of every branch of medical science, or in any way, to restrain the most entire freedom of thought, investigation and action in matters appertaining to the practice of medicine.

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1904. THEO. SURETH, M. D.
1905. C. P. SEIP, M. D.
1906. T. J. GRAMM, M. D.
1907. ANNA JOHNSTON, M. D.

SECOND VICE-PRESIDENTS.

1866. J. C. BURGHER, M. D.
1867. W. J. BLAKELY, M. D.
1868. J. J. DETWILLER, M. D.
1870. J. H. McCLELLAND, M. D.
1871. H. M. LOGEE, M. D.
1872. S. F. CHARLTON, M. D.
1873. J. C. BURGHER, M. D. (February.)
1873. H. R. FETTERHOFF, M. D. (October.)
1874. W. F. SPETH, M. D.
1875. H. N. MARTIN, M. D.
1876. J. E JAMES, M. D.
1877. J. E. JAMES, M. D.
1878. A. KORNDŒRFER, SR., M. D.
1879. L. M. ROSSEAU, M. D.
1880. J. W. ALLEN, M. D.
1881. J. J. DETWILLER, M. D.
1882. J. B. WOOD, M. D.
1883. C. F. BINGAMAN, M. D.
1884. H. DETWILLER, M. D.
1885. J. K. LEE, M. D.
1886. J. R. READING, M. D.
1887. EDWARD CRANCH, M. D.
1888. C. F. BINGAMAN, M. D.
1889. JOHN MALIN, M. D.
1890. C. H. LEE, M. D.
1891. M. J. CHAPMAN, M. D
1892 SARAH J. COE, M. D.
1893. J. L. FERSON, M .D.
1894. ELIZA L. McCLURE, M. D.
1895. A. P. BOWIE, M. D.
1896. E. R. SNADER, M D.
1897. H. B. WARE, M. D.
1898. EDWARD CRANCH, M. D.
1899. ANNA C. CLARKE, M. D.
1900. R. P. MERCER, M. D.
1901. W. J. MARTIN, M. D.
1902. W. A. SEIBERT, M. D.
1903. THEO. SURETH, M. D.
1904. E. R. GREGG, M. D.
1905. W .G. DIETZ, M D.
1906. ANNA D. VARNER, M. D.
1907. J. D. BOILEAU, M. D.

RECORDING SECRETARIES.

1866-1872. B. W. JAMES, M. D.
1873-1878. M. M. WALKER, M. D.
1879-1882. Z. T. MILLER, M. D.
1883. T. M. STRONG, M. D.
1884, 1885. C. BARTLETT, M. D.
1886, 1887. H. F. IVINS, M. D.
1888, 1889. J. H. CLOSSON, M. D.
1890-1894. J. R. HORNER, M. D.
1895. E. M. GRAMM, M. D.
1896-1907. G. B. MORELAND, M. D.

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CORRESPONDING SECRETARIES.

1866-1872. R. J. McCLATCHEY, M. D.
1873-1875. P. DUDLEY, M. D.
1876-1879. J. C. GUERNSEY, M. D.
1880-1885. R. E. CARUTHERS, M. D.
1886-1888. C. BARTLETT, M. D.
1889-1894. E. R. SNADER, M. D.
1895. J. R. HORNER, M. D.
1896-1907. E. M. GRAMM, M. D.

TREASURERS.

1866. D. COWLEY, M. D.
1867. H. H. HOFMAN, M. D.
1868. W. WILLIAMSON, M. D.
1870. W. J. BLAKELY, M D.
1871-1873. (February) O. B. GAUSE, M. D.
1873. (October) and 1874. R. J. McCLATCHEY, M. D.
1875-1899. J. F. COOPER, M. D.
1900-1907. ELLA D. GOFF, M. D.

NECROLOGISTS.

1872-1883. W. R. CHILDS, M. D.
1884. M. M. WALKER, M. D.
1885-1889. W. R. CHILDS, M. D.
1890-1894. W. J. MARTIN, M. D.
1895-1896. T. S. DUNNING, M. D.
1897-1901. T. L. BRADFORD, M. D.
1902. J. W. HASSLER, M. D.
1903-1906. C. WEAVER, M. D.
1907. WILLIAM F. BAKER, M. D.

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LIST OF MEMBERS.

1899—Adams, T. Louis, M. D., 1831 Chestnut Street, Philadelphia.
1907—Africa, G. S., M. D., Homœopathic Hospital, Pittsburg.
1905—Allen, John V., M. D., 4637 Frankford Ave., Philadelphia.
1907—Andrews, P. A., M. D., Allentown.
1907—Armor, Russell B., M. D., Crafton.
1907—Arnold, B. G., M. D., Downingtown.
1899—Arthur, Alexander B., M. D., 2039 Spring Garden Street, Philadelphia.
1899—Artz, Jerome L., M. D., 30th and Westfield Streets, Camden, N. J.
1898—Ashcraft, Leon T., M. D., 1833 Chestnut Street, Philadelphia.
1892—Baier, George F., M. D., Norwood.
1906—Baily, A. W., M. D., 1809 Pacific Ave., Atlantic City, N. J.
1901—Baker, A. L., M. D., Altoona.
1896—Baker, Albra W., M. D., 1445 Erie Ave., Williamsport.
1906—Baker, William F., M. D., 1425 Spruce Street, Philadelphia.
1905—Bamberger, F. E., M. D., 20 N. 7th Street, Lebanon.
1905—Barclay, H. B., M. D., Greensburg.
1905—Barker, Walter C., M. D., 2043 Girard Ave., Philadelphia.
1898—Barnes, Alonzo M., M. D., 3517 N. Broad Street, Philadelphia.
1881—BARTLETT, CLARENCE, M. D., 1437 Spruce Street, Philadelphia.
1905—Bartine, C. W., M. D., 253 W. Hansberry Street, Philadelphia.
1889—Bayley, Weston D., M. D., 124 S. 16th Street, Philadelphia.
1902—Belville, J. E., M. D., 5915 Green Street, Gtn., Philadelphia.
1904—Bernstein, Ralph, M. D., 37 S. 19th Street, Philadelphia.
1875—BETTS, B. F., M. D., 1609 Girard Ave., Philadelphia.
1904—Betts, Norman S., M. D., 1809 Chestnut Street, Philadelphia.
1904—Bibighaus, J. R., M. D., Glenside.
1907—Bickley, G. H., M. D., 1429 S. Broad Street, Philadelphia.
1905—Biddle, J. T., M. D., 515 W. Main Street, Monongahela.

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1886—BIER, P. A., M. D., 4200 Butler Street, Pittsburg.
1900—Bierman, H., M. D., Bloomsburg.
1906—Bigelow, W. S., M. D., Phillipsburg.
1906—Bigler, C. Albert, Jr., M. D., 2001 N. 13th Street, Philadelphia.
1873—BINGAMAN, C. F., M. D., 412 Pittsburg Life Bldg., Pittsburg.
1907—Bittner, Albert J., M. D., Allentown.
1907—Black, James A., M. D., 423 Charles Street, S. S., Pittsburg.
1905—Blackburn, E. C., M. D., Williamsport.
1906—Blackledge, Theron L., M. D., 1221 Third Ave., New Brighton.
1906—Blair, Alexander O., M. D., Stevenson Building, Pittsburg.
1892—Blair, W. W., M. D., 400 Penn Ave., Pittsburg.
1904—Blake, Eva N., M. D., 190 Maplewood Ave., Philadelphia.
1898—Boericke, Felix A., M. D., 1011 Arch Street, Philadelphia.
1905—Bohn, Daniel, M. D., 1021 Seventh Ave., Altoona.
1892—Boileau, John D., M. D., 804 W. Lehigh Ave., Philadelphia.
1905—Bolsinger, P. L., M. D., 533 Locust Street, Johnstown.
1904—Boone, G. H., M. D., Pottsville.
1872—BOWIE, A. P., M. D., 702 First Nat'l. Bank Bldg., Uniontown.
1882—BOYER, FRANCIS W., M. D., Pottsville.
1907—Bradford, G. M., M. D., Mt. Morris.
1906—Bradford, Thomas Lindsley, M. D., 1862 Frankford Ave., Philadelphia.
1904—Bradley, Thomas B., M. D., 960 N. 5th Street, Philadelphia.
1883—BRANSON, MARY, M. D., 1719 Arch Street, Philadelphia.
1906—Brewster, F. D., M. D., 309 Jefferson Ave., Scranton.
1898—Brickley, E. N., M. D., York.
1907—Briggs, H. G., M. D., 704 Bessemer Bldg., Pittsburg.
1904—Brooks, Charles M., M. D., 1409 N. 15th Street, Philadelphia.
1905—Brose, George W., M. D., 417 W. Market Street, York.
1906—Brown, C. Sheble, M. D., 3046 Frankford Ave., Philadelphia.
1905—Brown, L. S., M. D., Pittsburg Life Bldg., Pittsburg.
1894—Brown, S. G. A., M. D., Shippensburg.
1905—Browne, William C., M. D., Burnside.
1904—Brunnell, C. M., M. D., Stroudsburg.

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1893—Bryson, H. Ballou, M. D., 312 Pittsburg Life Bldg., Pittsburg.
1886—BULICK, T. M., M. D., 317 N. Second Street, Harrisburg.
1877—BULLARD, J. A., M. D., 200 S. Franklin Street, Wilkes-Barre.
1881—BUNTING, H. M., M. D., 521 Swede Street, Norristown.
1907—Burnite, J. T., M. D., Brownsville.
1905—Byer, J. M., M. D., Bustleton.
1907—Caldwell, Charles S., M. D., Swissvale.
1906—Calhoun, John C., M. D., 904 Western Ave., Allegheny.
1907—Carmalt, Horace G., M. D., 333 Grandview Ave., Pittsburg.
1888—Carmichael, T. H., M. D., 7127 Germantown Ave., Philadelphia.
1897—Carter, Woodward D., M. D., 1311 South Broad Street, Philadelphia.
1906—Casselberry, R. C., M. D., 700 Madison Street, Chester.
1898—Challinor, S. Boyd, M. D., 3619 Forbes Street, Pittsburg.
1905—Champlin, H. W., M. D., Bloomsburg.
1905—Chantler, I. B., M. D., 537 Beaver Street, Sewickley.
1875—CHAPMAN, MILLIE J., M. D., 219 Sixth Street, Pittsburg.
1900—Chase, Theo. L., M. D., 1604 Walnut Street, Philadelphia.
1905—Cheesman, Walter C., M. D., 211 N. 52d Street, Philadelphia.
1906—Chisolm, H. C., M. D., 528 Penn Street, Huntingdon.
1905—Christy, Daniel, M. D., Millvale.
1906—Clark, Edward P., M. D., Connellsville.
1902—Clark, Ernest L., M. D., Media.
1889—Clarke, Anna C., M. D., 426 Adams Ave., Scranton.
1905—Clifford, Joseph B., M. D., McKeesport.
1886—CLOSSON, J. H., M. D., 53 W. Chelton Ave., Germantown, Philadelphia.
1907—Coffin, Mary E., M. D., 3823 California Ave., Allegheny.
1906—Cook, W. C., M. D., Fulton Bldg., Pittsburg.
1894—Cooke, Mary A., M. D., 2113 N. 18th Street, Philadelphia.
1907—Cooper, George M., M. D., 2045 Chestnut Street, Philadelphia.
1901—Cooper, R. C., M. D., 1111 Federal Street, Allegheny.
1895—Cooper, Wm. H., M. D., Oakmont.
1907—Coy, Herbert B., M. D., 2724 Girard Ave., Philadelphia.

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1882—CRANCH, EDW., M. D., 109 W. Ninth Street, Erie.
1904—Crandell, Frank Foster, M. D., Turtle Creek.
1907—Crawford, J. J., M. D., Coraopolis.
1885—CROWTHER, ISAAC. M. D., 700 Madison Street, Chester.
1905—Culin, William D., M. D., 708 N. 40th Street, Philadelphia.
1907—Davies, L. E., M. D., Nazareth.
1906—Dean, H. G., M. D., New Castle.
1906—Dehoff, J. W., M. D., 480 W. Market Street, York.
1906—Deming, Ralph, M. D., 1613 N. 13th Street, Philadelphia.
1866—DETWILLER, JOHN J., M. D., 52 Centre Square, Easton.
1907—Detwiller, William K., M. D., Easton.
1903—De Witt, G. M., M. D., Board of Trade Bldg., Scranton.
1905—Diehl, Reuben O., M. D., Manheim.
1886—DIETZ, W. G., M. D., 21 N. Vine Street, Hazleton.
1878—DINSMORE, S. W. S., M. D., 60 N. Main Street, Sharpsburg.
1907—Douds, E. H., M. D., Beaver Falls.
1907—Douglass, John P., M. D., McDonald.
1904—Doyle, Wm. Francis, M. D., Pottsville.
1891—Drake, J. C. Merle, M. D., 720 Sassafrass Street, Erie.
1905—Dreher, C. B., M. D., Tamaqua.
1907—Dreibelbis, S. Leon, M. D., Reading.
1906—Dunning, T. S., M. D., 1328 N. 15th Street, Philadelphia.
1907—Dunning, T. Snively, M. D., Columbia.
1906—Ealer, Percy H., M. D., 2027 Spring Garden Street, Philadelphia.
1907—Eberhard, Harry M., M. D., 1710 N. 18th Street, Philadelphia.
1907—Edwards, H. R., M. D., Shady and Marshall Aves., Pittsburg.
1901—Elliott, J. D., M. D., 1421 Spruce Street, Philadelphia.
1873—EDMUNDSON, W. F., M. D., 1321 Fifth Ave., Pittsburg.
1904—Ervin, J. H., M. D., Jenkintown.
1905—Erwin, William, M. D., 4844 Cedar Ave., Philadelphia.
1906—Farrington, E. A., M. D., 1626 Walnut Street, Philadelphia.
1904—Fehr, H. A., M. D., Allentown.
1905—Fisher, G. S., M. D., 517 N. 7th Street, Lebanon.
1906—Fischer, J. A., M. D., 505 Green Street, Philadelphia.
1904—Fleagle, Maurice M., M. D., Hanover.

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1907—Fleming, R. K., M. D., 315 S. Highland Ave., Pittsburg.
1907—Focht, G. M., M. D., Lebanon.
1905—Follmer, W. H., M. D., Milton.
1907—Forrest, F. B., M. D., Bellwood.
1906—Fox, Charles D., M. D., 2126 Pine Street, Philadelphia.
1906—Frank, J. W., M. D., 114 N. 17th Street, Philadelphia.
1907—Frosch, Frank J., M. D., 2616 N. 5th Street, Philadelphia.
1905—Fulmer, Charles R., 1211 W. Allegheny Ave., Philadelphia.
1902—Furman ,Horace S., M. D., 1705 Tioga Street, Philadelphia.
1905—Gaggin, Verner S., M. D., 5182 Liberty Ave., Pittsburg.
1906—Gal'agher, Michael F., M. D., 1514 N. 18th Street, Philadelphia.
1907—Gangloff, Harry M., M. D., Uniontown.
1898—Gann, G. W., M. D., Du Bois.
1907—Gans, Robert A., M. D., Connellsville.
1904—Garis, Frank, A., M. D., 316 W. Broad Street, Bethlehem.
1904—Garner, Albert Rowland, M. D., Norristown.
1907—Gaston, John C., M. D., Beaver Falls.
1907—Gates, Alfred, M. D., Lebanon.
1901—Gates, W. D., M. D., Indiana.
1904—Gay, H. M., M. D., 1687 N. 54th Street. Philadelphia.
1907—Geddes, C. P., M. D., Washington.
1906—Gerberich, D. P., M. D., Lebanon.
1886—GERHART, JOS. M., M. D., 1127 Mt. Vernon Street, Philadelphia.
1904—Gerhart, Weber L., M. D., 36 S. 3d Street, Lewisburg.
1907—Getze, George W., M. D., Tarentum.
1907—Gifford, Edward F., M. D., Erie.
1891—Gilbert, Irwin B., M. D., 2027 Columbia Ave., Philadelphia
1894—Gittens, Theodore P., M. D., 1716 Diamond Street, Philadelphia.
1905—Gladwin, F. E., M. D., 2204 N. 17th Street, Philadelphia.
1891—Goff, Ella D., M .D., Library Place, N. Diamond Street, E. Allegheny.
1903—Golden, G. Morris, M. D., 1449 Venango Street, Philadelphia.
1875—GOODNO, W. C., M. D., 1603 Walnut Street, Philadelphia.

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1907—Goodsell, J. W., M. D., New Kensington.
1883—GRAMM, EDWARD M., M. D., 1833 Chestnut Street, Philadelphia.
1883—GRAMM, THEO. J., M. D., 846 N. Broad Street, Philadelphia.
1904—Gray, T. C., M. D., Easton.
1895—Gregg, Edw. R., M. D., 334 S. Highland Ave., Pittsburg.
1905—Greno, R. M., M. D., Arnold.
1905—Griffith, J. B., M. D., 48 Chestnut Street, Lewistown.
1888—Griffith, Louis B., M. D., 2449 Columbia Ave., Philadelphia.
1905—Griggs, William B., M. D., 1449 N. 10th Street, Philadelphia.
1874—GUERNSEY, J. C., M. D., 1923 Chestnut Street, Philadelphia.
1894—Haas, George H., M. D., 121 N. 8th Street, Allentown.
1885—HAINES, O. S., M. D., 137 N. 15th Street, Philadelphia.
1904—Haller, George C., M. D., 4564 Wayne Ave., Philadelphia.
1907—Haman, Charles R., M. D., Reading.
1887—Haman, W. A., M. D., 122 N. 8th Street, Reading.
1906—Hamilton, Samuel, Jr., M. D., Stanton and Negley Aves., Pittsburg.
1904—Hammond, W. Nelson, M. D., 1424 Poplar Street, Philadelphia.
1899—Harner, D. W., M. D., 1930 Chestnut Street, Philadelphia.
1891—Harpel, F. E., M. D., 211 Ferry Street, Danville.
1904—Harpel, G. W., M. D., 3d and Maple Streets, Mt. Carmel.
1884—HARRIS, D. R., M. D., 41 N. Jefferson Street, New Castle.
1906—Hartley, Arthur, M. D., 2101 Susquehanna Ave., Philadelphia.
1904—Hartman, G. Willis, M. D., 1207 N. 3d Street, Harrisburg.
1883—HASSLER, W. A., M. D., 105 N. 8th Street, Allentown.
1895—Heilner, H. F., M. D., Scranton.
1905—Heimbach, A. E., M. D., Renovo.
1905—Heimbach, J. M., M. D., Kane.
1899—Hendrixson, Lewis H., M. D., 5615 Wyalusing Ave., Philadelphia.
1907—Hennington, J. G., M. D., Uniontown.
1892—Heritage, A. C., M. D., Jenkintown.

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1904—Heritage, J. B., M. D., Langhorne.
1904—Hess, H. P., M. D., Pine Grove.
1902—Heysinger, Isaac W., M. D., 1521 Poplar Street, Philadelphia.
1892—Hill, E. H., M. D., Pittston.
1906—Hillegas, Wm. M., M. D., 1001 Belmont Ave., Philadelphia.
1882—HOFMANN, C. H., M. D., 510 S. Highland Ave., Pittsburg.
1903—Holben, Malcolm D., M. D., Slatington.
1883—HOLBEN, M. J., M. D., Slatington.
1905—Holcombe, William B., M. D., 1509 Girard Ave., Philadelphia.
1905—Hollowell, James, M. D., Parkesburg.
1906—Holsberg, W. H., M. D., 927 Cumberland Street, Lebanon.
1904—Hood, Joseph R., M. D., Sewickley.
1906—Hornecker, J. C., M. D., 3813 Forbes Ave., Pittsburg.
1904—Howell, Frederick E., M. D., 307 N. 5th Street, Reading.
1905—Huber, W. H., M. D., Edge Hill.
1905—Humes, James R., M. D., Hollidaysburg.
1905—Humes, John H., M. D., Hollidaysburg.
1904—Humphreys, E., M. D., 131 N. 15th Street, Philadelphia.
1905—Hunsicker, William C., M. D., 201 N. 17th Street, Philadelphia.
1905—Huston, Arthur F. P., M. D., 22 N. Diamond Street, W., Allegheny.
1906—Imes, Thomas C., M. D., 518 S. 15th Street, Philadelphia.
1886—INGERSOLL, W. K., M. D., 4008 Chestnut Street, Philadelphia.
1907—Insley, William W., M. D., Donora.
1907—Jackson, Frank B., M. D., Oil City.
1903—James, D. B., M. D., 1819 Chestnut Street, Philadelphia.
1867—JAMES JOHN E., M. D., 1521 Arch Street, Philadelphia.
1902—James, John Edwin, Jr., M. D., 1819 Chestnut Street, Philadelphia.
1906—Jamison, M. R., M. D., Greensburg.
1881—JOHNSON, THEODORE M., M. D., 200 Susquehanna Ave., Pittston.
1901—Johnston, Anna, M. D., 5016 Liberty Ave., Pittsburg.
1905—Johnston, J. E., M. D., 7035 Hamilton Ave., Pittsburg.
1889—Kase, Edmund H., M. D., 1325 Girard Ave., Philadelphia.

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1891—Kaufman, John, M. D., Hazleton.
1905—Kauffman, A. B., M. D., 28 E. Walnut Street, Lancaster.
1885—KEIM, WILLIAM H., M. D., 1716 N. 18th Street, Philadelphia.
1905—Keller, J. D., M. D., 139 Carlisle Street, Hanover.
1905—Kessler, H. D., M. D., Altoona.
1904—Kiefer, J. D., M. D., Mt. Carmel.
1907—Kieffer, W. J., M. D., 373 N. 8th Street, Lebanon.
1901—Kinney, C. Spencer, M. D., Easton.
1906—Kistler, A. L., M. D., N. E. Cor. 9th and Linden Streets. Allentown.
1904—Kistler, Grant M., M. D., Lansford.
1904—Kistler, Horace E., M. D., 313 Main Street, Johnstown.
1904—Kistler, J. S., M. D., Shenandoah.
1904—Kistler, M. S., M. D., Shenandoah.
1905—Kistler, Seth W., M. D., Nanticoke.
1904—Kistler, W. F., M. D., Minersville.
1891—Kline, D. C., M. D., 5th and Chestnut Streets, Reading.
1905—Klock, H. A., M. D., Mahanoy City.
1906—Knerr, Bayard, M. D., 1137 Spruce Street, Philadelphia.
1877—KNERR, C. B., M. D., 1833 Chestnut Street, Philadelphia.
1907—Knerr, Levi J., M. D., 55 N. 40th Street, Philadelphia.
1907—Koons, F. W., M. D., Homœopathic Hospital, Pittsburg.
1872—KORNDŒRFER, AUGUSTUS, SR., M. D., 1728 Green Street, Philadelphia.
1896—Korndœrfer, Augustus, Jr., M. D., 142 N. 18th Street, Philadelphia.
1900—Kreider, J. H., M. D., Lykens.
1900—Kressley, J. A., M. D., New Tripoli.
1896—Krusen, Edward A., M. D., Norristown.
1905—Lacy, Henry A., M. D., 743 N. 17th Street, Philadelphia.
1903—Lane, Nathaniel F., M. D., 1620 Green Street, Philadelphia.
1907—Lawrence, Frank H., M. D., 1518 Perkiomen Ave., Reading.
1888—Layman, Alfred, M. D., 1630 N. 18th Street, Philadelphia.
1907—Leas, F. C., M. D., 400 S. 40th Street, Philadelphia.
1905—Leopold, H. P., M. D., 1829 Chestnut Street, Philadelphia.
1905—Leslie, Edward C., M. D., 5709 Penn Ave., Pittsburg.
1905—Levis, George E., M. D., 1746 Orthodox Street, Philadelphia.

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1907—Lewis, Margaret C., M. D., 4027 Spring Garden Street, Philadelphia.
1894—Lichtenwalner, A. B., M. D., 2435 N. 7th Street, Philadelphia.
1906—Livingston, M. W., M. D., Latrobe.
1905—Locke, M. J., M. D., Bellefonte.
1907—Long, Howard, W., M. D., 1534 W. Lehigh Ave., Philadelphia.
1905—Longwell, Demerest W., M. D., Tioga.
1904—Longwell, J. P., M. D., Wellsboro.
1904—Loos, Julia C., M. D., 30 N. 2d Street, Harrisburg.
1868—MACFARLAND, MALCOLM, M. D., 1805 Chestnut Street, Philadelphia.
1886—MADDUX, D. P., M. D., 801 Madison Street, Chester.
1906—Malin, William H., M. D., 8408 Germantown Ave., Chestnut Hill, Philadelphia.
1905—Mann, S. S., M. D., Columbia.
1906—Mansfield, Harry K., M. D., 19 W. Chelten Ave., Germantown, Philadelphia.
1881—MANSFIELD, J. R., M. D., 5620 Germantown Ave., Philadelphia.
1904—Mantz, E. S., M. D., South Bethlehem.
1906—Marks, William F., M. D., 118 N. 9th Street, Reading.
1906—Marsden, Biddle R., M. D., Chestnut Hill, Philadelphia.
1883—MARSHALL, ANNA M., M. D., 1420 Chestnut Street, Philadelphia.
1891—Marshall, R. S., M. D., 424 Shady Ave., Pittsburg.
1905—Marshall, Watson, M. D., Diamond Bank Bldg., Pittsburg.
1877—MARTIN, W. J., M. D., 5440 Centre Ave., Pittsburg.
1906—Martin, W. Joline, M. D., 553 Trenton Ave., Wilkinsburg.
1905—Massey, Franklin F., M. D., Womelsdorf.
1904—Matlack, Thomas, M. D., 2356 E. York Street, Philadelphia.
1907—Maurer, E. H., M. D., Ashland.
1878—MAURER, J. M., M. D., Washington.
1907—Maust, George W., M. D., Lock Haven.
1907—McBride, L. E., M. D., Franklin.
1905—McCauley, E. S. H., M. D., Beaver.
1891—McCauley, J. C., M. D., 128 Connecticut Street, Rochester.
1879—McCLELLAND, J. B., M. D., 409 Penn Ave., Pittsburg.

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1867—McCLELLAND, J. H., M. D., 5th and Wilkins Ave., Pittsburg.
1884—McCLELLAND, R. W., M. D., 5th and Wilkins Ave., Pittsburg.
1883—McCLURE, ELIZA H. LANG. M. D., 1919 Wallace Street, Philadelphia.
1893—McCracken, William, M. D., 209 St. Clair Street, South Pittsburg.
1903—McDowell, A. S., M. D., 155 N. 5th Street. Reading.
1907—McEldowney, J., M. D., 4939 Catharine Street, Philadelphia.
1906—Mercer, Edward W., M. D., 1705 Arch Street, Philadelphia.
1871—MERCER ROBERT P., M. D., 223 W. 3d Street, Chester.
1905—Mercer, Warren C., M. D., 1705 Arch Street, Philadelphia.
1907—Merkel, George A., M. D., Minersville.
1896—Merrell, A. F., M. D., Hallstead.
1907—Merrill, Benjamin E., M. D., Dent's Run.
1905—Metzger, Irwin D., M. D., Tyrone.
1871—MIDDLETON, CALEB S., M. D., 1523 Girard Ave., Philadelphia.
1904—Miller, C. R., M. D., 198 S. 2d Street. Steelton.
1904—Miller, M. L., M. D., Mohnton.
1905—Miller, Seth S., M. D., Susquehanna.
1887—Miller, Z. T., M. D., 2013 Carson Street, S. S., Pittsburg.
1900—Minahan, Thomas, M. D., Carnegie.
1875—MOHR, CHARLES, M. D., Lawnton Ave., above Oak Lane, Philadelphia.
1906—Monroe, J. E., M. D., Orange, Mass.
1893—Moon, S. B., M. D., 1314 Eighth Ave., Beaver Falls.
1901—Moore, J. E., M. D., 319 Main Ave., Carnegie.
1893—Moreland, George B., M. D., Pittsburg Life Bldg., Pittsburg.
1906—Morris, Frederick S., M. D., Homœopathic Hospital, Pittsburg.
1901—Morrow, Emory H., M. D., Altoona.
1891—Mueller, G. A., M. D., Empire Bldg., Liberty Ave. and 5th Street, Pittsburg.
1906—Muhly, Edward G., M .D., 1627 S. Sixth Street, Philadelphia.
1888—Murdock, Robert, M. D., 160 S. Main Street, Wilkes-Barre.

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1907—Murphy, John, M. D., Loretta.
1901—Muth, F. L., M. D., Wilmerding.
1894—Myers, Charles Elwood, M. D., 170 Green Lane, Manayunk, Philadelphia.
1907—Nesbit, Edwin L., M. D., Bryn Mawr.
1904—Nicholson, Harland C., M. D., 2000 Wallace Street, Philadelphia.
1907—Nicholson, H. S., M. D., 1002 Empire Bldg., Pittsburg.
1893—Northrop, H. L., M. D., 1729 Arch Street, Philadelphia.
1905—Nuss, W. W., M. D., Wissinoming, Philadelphia.
1907—O'Donnell, H. J., M. D., 11 Washington Ave., Pittsburg.
1907—Osborn, James A., M. D., Hilton.
1906—Palen, Gilbert J., M. D., 1831 Chestnut Street, Philadelphia.
1896—Palmer, Charles R., M. D., West Chester.
1904—Palmer, Wayland R., Hollidaysburg.
1906—Parker, G. W., M. D., 5030 Market Street, Philadelphia.
1881—PARSONS, E. C., M. D., 275 Walnut Street, Meadville.
1897—Paxson, O. H., M. D., 1733 Arch Street, Philadelphia.
1900—Peck, John L., 524 Vine Street, Scranton.
1881—PERKINS, C. W., M. D., 403 Broad Street, Chester.
1907—Peterman, J. F., M. D., 523 Cumberland Street, Lebanon.
1883—PETTINGILL, ELIZA F., M. D., 300 N. 10th Street, Philadelphia.
1891—Phillips, Joseph R., M. D., 15 E. 8th Street, Erie.
1906—Pierce, Ward I., M. D., Diamond Bank Building, Pittsburg.
1897—Piper, R. L., M. D., Tyrone.
1905—Piper, William Scott, M. D., Clearfield.
1880—PITCAIRN, HUGH, M. D., 206 State Street, Harrisburg.
1907—Platt, Charles, M. D., 3612 Baring Street, Philadelphia.
1906—Plush, James A., M. D., 319 S. 10th Street, Philadelphia.
1906—Pond, Edward H., M. D., 403 Pittsburg Life Bldg., Pittsburg.
1886—POSEY, L. P., M. D., 1807 Walnut Street, Philadelphia.
1896—Powel, Franklin, M. D., Madison and 5th Streets, Chester.
1907—Powell, Howard, M. D., Glenside.
1883—POWELL, W. C., Jr., M. D., Bryn Mawr.
1871—PRATT, TRIMBLE, M. D., Media.
1907—Price, D. J., M. D., Shenandoah.
1900—Prizer, E. T., M. D., Lancaster.

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1907—Proctor, W. M., M. D., Braddock.
1896—Pursell, James P., M. D., Sellersville.
1904—Quackenbush, F. B., 4700 Chester Ave., Philadelphia.
1906—Ramsey, H. E., M. D., 713 Arch Street, Allegheny.
1897—Raue, C. Sigmund, M. D., 1626 Walnut Street, Philadelphia.
1906—Reading, J. H., M. D., 1811 Green Street, Philadelphia.
1906—Reading, L. W., M. D., 1629 Green Street, Phi'adelphia.
1888—Reading, Thomas, M. D., Hatboro.
1896—Redman, John L., M. D., 1336 Spruce Street, Philadelphia.
1906—Reeves, Joseph M., M. D., 1525 Spruce Street, Philadelphia.
1905—Reich, George R., M. D., Marietta.
1907—Reinhold, Hannah C., M. D., Williamsport.
1904—Reitz, J. J., M. D., Walnutport.
1905—Rhodes, C. M., M. D., 914 N. 6th Street, Harrisburg.
1904—Richards, Charles M., M. D., 13 N. 9th Street, Reading.
1905—Richards, F. L., M. D., Mt. Joy.
1896—Ridge, Jonathan T., M. D., 1617 N. 7th Street, Philadelphia.
1907—Riegel, A. J., M. D., Lebanon, 368 N. 8th Street.
1878—RINEHART, C. C., M. D., 4637 Centre Ave., Pittsburg.
1907—Rittenhouse, J. S., M. D., Reading.
1907—Robinson, Walter P., M. D., Homœopathic Hospital, Pittsburg.
1904—Rochester, J. R., M. D., 863 N. 7th Street, Philadelphia.
1906—Roman, Desiderio, M. D., 1429 Poplar Street, Phi'adelphia.
1906—Roscoe, H. A., M. D., 404 Diamond Bank Bldg., Pittsburg.
1905—Rosenberger, Henry D., M. D., Manheim.
1905—Roth, William F., M. D., Wilkes-Barre.
1894—Rotzell, W. E., M. D., 5542 Lansdowne Ave., Philadelphia.
1907—Rowland, John F., M. D., 430 N. 52d Street, Philadelphia.
1907—Sager, C. W., M. D., Titusville.
1906—Sample, Clyde W., M. D., 813 Wood Street, Wilkinsburg.
1888—Sandel, J. H., M. D., 49 Centre Ave., Plymouth.
1905—Sanderson, H. H., M. D., Johnstown.
1906—Sankey, B. E., M. D., 54 N. Jefferson Street, New Castle.
1907—Sappington, S. W., M. D., 1826 N. 13th Street, Philadelphia.
1872—SARTAIN, HARRIET J., M. D., 212 W. Logan Square, Philadelphia.

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1901—Sawers, F. C., M. D., 5130 Second Ave., Pittsburg.
1896—Schantz Henry F., M. D., 402 N. 5th Street, Reading.
1892—Schantz, M. Hassler, M. D., 402 N. 5th Street, Reading.
1883—SCHREINER, EMMA T., M. D., Cor. Wayne and Maplewood Aves., Germantown, Philadelphia.
1886—SEIBERT, W. A., M. D., 43 N. 4th Street, Easton.
1900—Seibert, Walter W., M. D., 43 N. 4th Street, Easton.
1907—Seidel, F. W., M. D., Front and Buttonwood Streets, Reading
1868—SEIP, C. P., M. D., 316 N. Highland Ave., Pittsburg.
1905—Seip, Herman H., M. D., 316 N. Highland Ave., Pittsburg.
1905—Seitz, W. C., M. D., Glen Rock.
1906—Shallcross, I. G., M. D., 1631 Arch Street, Philadelphia.
1906—Shannon, S. F., M. D., 603 N. 52d Street, Philadelphia.
1905—Sharbaugh, W. J., M. D., 607 24th Street, Altoona.
1885—SHELLENBERGER, C. N., M. D., 1st Nat'l Bank Bldg., Colorado Springs, Colo.
1907—Shepard, Warren B., M. D., Homœopathic Hospital, Pittsburg.
1905—Shower, John A., M. D., 104 S. Beaver Street, York.
1903—Shute, A. Clement, M. D., 421 High Street, Pottstown.
1900—Simmons, C. W., M. D., 1628 N. 18th Street, Philadelphia.
1897—Simmons, S. S., M. D., Susquehanna.
1905—Simpson, K. S., M. D., Carnegie.
1906—Sloan, Malachi W., M. D., 4825 Baltimore Ave., Philadelphia.
1883—SLOUGH, F. J., M. D., 120 N. 8th Street, Allentown.
1907—Slough, W. C. J., M. D., Emaus.
1892—Smedley, Charles D., M. D., Wayne.
1907—Smith, Clarence R., M. D., 6338 Woodbine Ave., Philadelphia.
1907—Smith, Frederick W., M. D., 1430 Wolfe Street, Philadelphia.
1889—Smith, George W., M. D., 806 N. Broad Street, Philadelphia.
1887—Snader, E. R., M. D., 1919 Arch Street, Philadelphia.
1900—Snyder, E. S., M. D., Lancaster.
1904—Snyder, L. A., M. D., Ashland.
1894—Somerville, W. H., M. D., 1214 Hanover Street, Philadelphia.
1896—Spahr, Charles E., M. D., 10 W. Market Street, York.

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1904—Speakman, William W., M. D., 1831 Chestnut Street, Philadelphia.
1889—Spencer, William, M. D., 1623 Walnut Street, Philadelphia.
1907—Sperling, F. J. E., M. D., Wilkes-Barre.
1907—Sperling, John G., M. D., Wilkes-Barre.
1881—STAMBACH, H. L., M. D., 15 W. Victoria Street, Santa Barbara, Cal.
1906—Statler, Edgar C., M. D., 461 Linden Street, Allentown.
1907—Steckel, Ellwood K., M. D., Orwigsburg.
1905—Steele, William, Jr., M. D., 2340 N. 13th Street, Philadelphia.
1906—Stegmenn, Charles W., M. D., 4634 E. Thompson Street, Philadelphia.
1906— Steinmetz, Deacon, M. D., 1835 N. 17th Street, Philadelphia.
1907—Stephens, T. W., M. D., Wilkinsburg.
1891—Stephens, W. R., M. D., Wood Street, Wilkinsburg.
1904—Sterner, L. H., M. D., Porter's Sideling.
1894—Stewart, G. W., M. D., 1823 Chestnut Street, Philadelphia.
1903—Stewart, Wm. A., M. D., Lang and Thomas Aves., Pittsburg.
1901—Stitzel, J. W., M. D., Hollidaysburg.
1906—Stokes, Lydia W., M. D., 1719 Arch Street, Philadelphia.
1904—Straub, D. W., M. D., Bethlehem.
1904—Straub, E. L., M. D., Minersville.
1907—Straube, Rudolph, M. D., 2822 Girard Ave., Philadelphia.
1907—Strayer, Robert F., M. D., York.
1905—Strock, Henry B., M. D., Bedford.
1885—STRONG, J. WILMER, M. D., 2049 N. 13th Street, Philadelphia.
1889—Strong, Walter, M. D., 2105 N. 13th Street, Philadelphia.
1904—Summers, Robert S., M. D., 2610 N. 12th Street, Philadelphia.
1907—Sunanday, F. W., M. D., Bernharts P. O.
1904—Super, A. H., M. D., Tamaqua.
1896—Sureth, Theodore, M. D., 1821 N. Main Ave., Scranton.
1905—Sutton, John C., M. D., 1231 Third Ave., New Brighton.
1904—Swalm, T. W., M. D., Pottsville.
1906—Swartz, J. Ross, M. D., Harrisburg.

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1906—Swick, J. Howard, M. D., Beaver Falls.
1901—Taylor, Amos O., M. D., 1415 12th Ave., Altoona.
1905—Taylor, G. P., M. D., Columbia.
1906—Tay'or, Howard W., M. D., 316 Collins Ave.; Pittsburg.
1907—Taylor, William S., M. D., Malvern.
1904—Tegtmeier, C. E., M. D., 1237 Shackamaxon Street, Philadelphia.
1905—Tegtmeier, C. F., M. D., 117 Fourth Ave., Conshohocken.
1906—Terry, Howard, Jr., 226 Church Street, Phœnixville.
1907—Thacher, George H., M. D., 2008 Chestnut Street, Philadelphia.
1906—Thatcher, J. W., M. D., 35th and Hamilton Streets, Philadelphia.
1906—Thomas, C. L., M. D., 2802 Columbia Ave., Philadelphia.
1877—THOMAS, CHARLES MONROE, M. D., 1825 Chestnut Street, Philadelphia.
1907—Thomas, Delano C., M. D., Forbes and Atwood Streets, Pittsburg.
1906—Thomas, Edward C., M. D., 711 N. 43d Street, Philadelphia.
1906—Thompson, J. G., M. D., 703 Third Ave., New Brighton.
1886—THOMPSON, J. H., M. D., Pittsburg Life Bldg., Pittsburg.
1887—Thompson, Landreth W., M. D., 1701 Green Street, Philadelphia.
1907—Thurston, Leon, M. D., Empire Bldg., Pittsburg.
1907—Tindall, Percy A., M. D., 1613 S. Broad Street, Philadelphia.
1891—Tomlin, R. E., M. D., 2057 N. 8th Street, Philadelphia.
1907—Tomlinson, W. H., M. D., 44 E. Walnut Lane, Philadelphia.
1905—Tripp, J. C., M. D., Warren Centre.
1901—Tuller, John J., M. D., 1935 Chestnut Street, Philadelphia.
1906—Tyrrel, Urania, M. D., 154 N. 20th Street, Philadelphia.
1896—Ulrich, Silvester, M. D., Elizabethtown.
1906—Umstead, D. B., M. D., Tacony, 23d Ward, Philadelphia.
1883—VAN BAUN, W. W., M. D., 1402 Spruce Street, Philadelphia.
1886—VAN DEUSEN, EDWIN M., M. D., 2101 Tioga Street, Philadelphia.
1907—Van Keuren, J. C., M. D., Chester.

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1896—Van Lennep, G. A., M. D., 1833 Chestnut Street, Philadelphia.
1881—VAN LENNEP, W. B., M. D., 1421 Spruce Street. Philadelphia.
1898—Van Tine, J. Lewis, M. D., 1706 Girard Ave., Philadelphia.
1901—Varner, Anna D., M. D., 616 Wood Street, Wilkinsburg.
1907—Vaughan, E. M., M. D., Royersford.
1905—Waaser, J. F., M. D., E. Mauch Chunk.
1904—Walker, H. Ellen, M. D., Sharon.
1907—Wallace, H. D., M. D., 412 Sandusky Street, Allegheny.
1907—Walley, L. P., M. D., Mifflintown.
1906—Walter J. A., M. D., Punxsutawny.
1896—Walter, Robert, M. D., Walters Park.
1894—Ware, H. B., M. D., Cor. Washington and Linden Streets, Scranton.
1906—Wasserman, Flora E., M. D., 1909 N. Broad Street, Philadelphia.
1904—Watson, Franklin, M. D., Willow Grove.
1894—Waylan, Julia Gould, M. D., 1832 Tioga Street, Philadelphia.
1894—Weaver, H. S., M. D., 1433 Spruce Street, Philadelphia.
1902—Weaver, W. A., M. D., 1331 Girard Ave., Philadelphia.
1894—Webster, Samuel C., M. D., Media.
1907—Weil, John H., M. D., 2838 N. 5th Street, Philadelphia.
1907—Wells, Charles H., M. D., 434 N. 38th Street, Philadelphia.
1905—Wells, G. Harlan, M.D., 1623 Arch Street, Philadelphia.
1907—Wendt. C. I., M. D., 117 S. Highland Ave., Pittsburg.
1905—Wesner, M. A., M. D., 407 Franklin Street, Johnstown.
1906—White, A. Grace, M. D., Bradford.
1889—White, Roland T., M. D., 914 Western Ave.. Allegheny.
1904—Wiest. Harry G., M. D., Schuylkill Haven,
1907—Wilcox, Frederic P., M. D., 2031 Diamond Street, Philadelphia.
1899—Wilford, H. H., M. D., Bangor.
1906—Willard, Lewis D. W., M. D., 955 Western Ave., Allegheny.
1870—WILLETS, WILLIAM, M. D.
1907—Williams, Clara H., M. D., Wilkinsburg.
1907—Williams, C. C., M. D., 24 Washington Ave., S. S., Pittsburg.
1903—Williams, Harry E., M. D., Coatesville.

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1905—Williams, Olin A., M. D., Butler.
1906—Williamson, M. S., M. D., 500 S. 42d Street, Philadelphia.
1905—Wilson, M. A., M. D., 140 E. 8th Street, Erie.
1907—Witmeyer, H. C., M. D., 500 N. 8th Street, Lebanon.
1907—Wolfe, W. Wesley, M. D., 24 N. Diamond Street, W., Allegheny.
1907—Woodard, F. H., M. D., Sugar Grove.
1904—Wooldridge, F. V., M. D., 408 2d Avenue, Pittsburg.
1904—Yale, Arthur W., M. D., 1901 Park Avenue, Philadelphia.
1905—Yeagley, J. H., M. D., 127 E. Market Street, York.
1905—Yeagley, J. M., M. D., 144 N. Prince Street, Lancaster.
1906—Yocom, C. A., M. D., Carlisle.
1880—YODER, DANIEL, M. D., Catasauqua.
1907—Yost, George G., M. D., 643 N. 16th Street, Philadelphia.
1894—Ziegenfus, A. Frank, M. D., 1124 Wallace Street, Philadelphia.

HONORARY MEMBERS.

1883—Allen, H. C., M. D., 5142 Washington Ave., Chicago, Ill.
1898—Custis, J. B. Gregg, M. D., 110 E. Capitol Street, Washington, D. C.
1876—Jones, S. A., M. D., Ann Arbor, Mich.
1900—Nash, E. B., M. D., Cortland, New York.
1883—Phillips, W. A., M. D., Cleveland, Ohio.
1898—Porter, Eugene H., M. D., 181 W. 73d Street, New York.
1892—Williamson, Alonzo P., M. D., Patton, San Bernardino Co., Cal.

CORRESPONDING MEMBERS.

1873—Alvarez, Paz, M. D., Madrid, Spain.
1873—Chauvet, Fernand, M. D., Tours, France.
1873—Eidherr, Francis, M. D., Vienna, Austria.
1893—Pope, Alfred C., M. D., London, England.

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NECROLOGICAL LIST.

1902—Adams, W. K., M. D., died July 17th, 1903.
1866—Ashton, A. H., M. D., died February 18th, 1883.
1899—Baker, Daniel J., died July 30, 1902.
1866—Barnaby, John E., M. D., died January 5th, 1869.
1867—Barrett, Charles B.. M. D., died June 5th 1871.
1882—Bernard, H., M. D., died ———.
1903—Bigler, Bernard E., M. D., died February 20th, 1905.
1872—Bigler, William H., M. D., died December 10th, 1904.
1866—Blakeley, W. James, M. D., died January 14th, 1877.
1884—Boyd, G. S., M. D., died May 10th; 1901.
1870—Bratt, Benjamin R., M. D., died January 31st, 1872.
1896—Brewer, Mary, M. D., died June 10th, 1907.
1895—Brierly, Frank Walter, M. D., died June 17th, 1899.
1866—Brooks, Silas S., M. D., died July 2d, 1871.
1883—Brown, Samuel, M. D., died March 22d, 1892.
1891—Brown, Wm. K., M. D.. died October 3d, 1900.
1885—Buchman, Francis, M. D., died July 14th, 1898.
1891—Burlingame, F. W.. M. D., died ———.
1883—Burr, Richard. M. D., died March 30th, 1885.
1873—Caruthers, R. E.. M. D., died January 3d, 1885.
1868—Charlton, S. T., M. D., died November 9th, 1886.
1863—Childs, William R.. M. D., died November 11th, 1888.
1883—Coe, Sarah J.. M. D., died November 4th, 1903.
1866—Cook, William H.. M. D., died March 11th, 1879.
1866—Cooper, John F., M. D.. died August 19th, 1899.
1866—Cote, M.. M. D., died May 29th, 1878.
1866—Cowley, David. M. D., died October 30th, 1886.
1898—Cresson, Charles C., M. D., died ———.
1868—Dake, J. P., M. D. (honorary), died October 28th, 1894.
1891—Davis, B. L., M. D., died ———
1866—Detweiler, Henry, M. D.. died April 21st, 1887.
1886—Dowling, John W.. M. D. (honorary), died January 14th, 1892.

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1871—Dreibelbis, David L., M. D., died March 24th, 1872.
1867—Dudley, Pemberton, M. D., died March 25th, 1907.
1878—Duff, P. S., M. D., died April 1st, 1904.
1870—Earhart, Jacob R., M. D., died June 23d, 1891.
1891—Ely, J., M. D., died ———.
1870—Farrington, E. A., M. D., died December 17th, 1885.
1904—Felsberg, Paul F., M. D., died October 28th, 1906.
1880—Ferson, John L., M. D., died July 12th, 1896.
1866—Freise, Michael, M. D., died February 4th, 1880.
1866—Frost, J. H. P., M. D., died January 21st, 1875.
1873—Fulton, H. W., died June 23d, 1907.
1889—Gangloff, Charles, M. D., died January 22d, 1898.
1866—Gardiner, Richard, M. D., died March 22d, 1877.
1866—Gause, O. B., M. D., died January 11th, 1895.
1905—Gerberich, M. B., M. D., died November 1st, 1905.
1899—Godshall, Samuel G., M. D., died April 4th, 1903.
1867—Gramm, Gustavus E., M. D., died November 2d, 1901.
1886—Griffith, Jethro J., M. D., died July 5th, 1893.
1881—Griffith, Silas, M. D., died May 21st, 1904.
1877—Griffith, Wm. M., M. D., died April 20th, 1903.
1877—Grumbeid, William, M. D., died ———.
1866—Guernsey, H. N., M. D., died June 27th, 1885.
1870—Guernsey, W. F., M. D., died February 16th, 1877.
1867—Gumpert, B. Barton, M. D., died June 23d, 1904.
1895—Hall, William D., M. D., died August 2d, 1897.
1883—Hancock, Joseph, M. D., died January 19th, 1906.
1904—Harry, F. M., M. D., died November 20th, 1905.
1888—Hawley, S. B., M. D., died March 6th, 1890.
1868—Helmuth, William Tod, M. D. (honorary), died ———
1866—Herron, James A., M. D., died November 15th, 1868.
1866—Hofmann, Herman H., M. D., died April 4th, 1891.
1886—Holcombe, John Randolph, M. D., died December 17th, 1896.
1884—Hosfeld, George, M. D., died November 9th, 1884.
1873—Houard, J. G., M. D., died April 24th, 1878.
1885—Houghton, Henry C., M. D. (honorary), died ———.
1889—Hoy, H. K., M. D., died July 5th, 1906.
1882—Ivins, Horace F., M. D., died January 1st, 1899.
1866—James, Bushrod W., died January 6th, 1903.

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1866—James, David, M. D., died June 6th, 1873.
1866—Jeanes, Jacob, M. D., died December 18th, 1877.
1866—Koch, Augustus W., M. D., died May 4th, 1886.
1889—Lazear, Lyttleton L., M. D., died ———, 1898.
1866—Lee, J. K., M. D., died November 10th, 1887.
1869—Lee, John K., M. D., died May 31st, 1899.
1894—Lentz, Levi R., M. D., died May 27th, 1902.
1876—Lilienthal, S., M. D. (honorary), died October 3d, 1891.
1867—Lippe, Adolph, M. D., died January 23d, 1888.
1871—Lovejoy, E., M. D. (honorary), died August 15th, 1872.
1868—Malin, George W., M. D., died January 18th, 1883.
1886—Malin, John, M. D., died November 29th, 1889.
1866—Marsden, J. H., M. D., died August 27th, 1883.
1865—Martin, Henry Noah, M. D., died September 1st, 1889.
1881—May, Newton, M. D., died January 27th, 1889.
1866—McClatchey, R. J., M. D., died January 15th, 1883.
1887—Millen, J. C., M. D., died ———, 1901.
1870—Moore, Thomas, M. D., died March 25th, 1882.
1867—Morgan, John Coleman, M. D., died June 27th, 1899.
1866—Neville, W. H. H., M. D., died January 22d, 1904.
1873—Nichol, Thos., M. D. (corresponding), died June 14th, 1890.
1869—Ostrander, W. M., M. D., died August 23d, 1881.
1868—Paine, H. M., M. D. (honorary), died December 5th, 1903.
1868—Payne, Wm. E., M. D. (honorary), died March 9th, 1877.
1878—Pereira, Ignacio, M. D. (corresponding), died April 18th, 1881.
1894—Peters, J. Elwood, M. D., died ———, 1904.
1868—Pfoutz, J. S., M. D., died ———.
1866—Preston, Coates, M. D., died August 9th, 1881.
1868—Pulte, J. H., M. D. (honorary), died February 24th, 1884.
1882—Pursel, J. E., M. D., died March 15th, 1885.
1872—Rankin, John Stephen, M. D., died April 21st, 1899.
1866—Raue, Charles G., M. D., died August 21st, 1896.
1867—Reading, Edward, M. D., died March 7th, 1889.
1866—Reading, John R., M. D., died February 14, 1886.
1870—Reinhold, H. E., M. D., died March 6th, 1879.
1871—Rittenhouse, S. R., M. D., died June 26th, 1895.
1895—Roberts, C. W., M. D., died March 20th, 1903.

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1866—Roberts, R. Ross, M. D., died April 4th, 1875.
1887—Rodes, Joseph, M. D., died ———, 1898.
1866—Rosseau, L. M., M. D., died September 25th, 1882.
1874—Schmucker, Francis R., M. D., died ———.
1872—Scott, James L., M. D., died August 15th, 1876.
1883—Sharkey, W. P., M. D., died August ———, 1903.
1892—Shoemaker, D. W., M. D., died April 27th, 1904.
1883—Skeels, James S., M. D., died ———, 1891.
1880—Smedley, Isaac G., M. D., died December 1st, 1899.
1870—Spencer, J. H., M. D., died ———.
1872—Speth, W. F., M. D., died May 11th, 1881.
1889—Starr, Pearl, M. D., died July ———, 1900.
Stauffer, D. R., M. D., died March 16th, 1874.
1894—Steele, William G., M. D., died April 30th, 1906.
1867—Stevens, C. A., M. D., died January 17th, 1881.
1868—Talbot, I. Tisdale, M. D. (honorary), died July 2d, 1899.
1870—Taudte, F., M. D., died March 27th, 1878.
1902—Taylor, William Gardiner, M. D., died March 4th, 1904.
1871—Thomas, Amos R., M. D., died October 31st, 1895.
1891—Tindall, Harry Brooks, M. D., died January 9th, 1892.
1882—Trites, W. B., M. D., died January 19th, 1890.
1889—Visher, Carl V., M. D., died May 13th, 1906.
1867—Walker, Mahlon M., M. D., died March 31st 1896.
1870—Waters, George H., M. D., died ———, 1892.
1880—Way, J. H., M. D., died September 3d, 1887.
1881—Weaver, Chandler, M. D., died November 1st, 1906.
1866—Willard, Lewis H., M. D., died July 30th, 1906.
1866—Williams, Thomas C., M. D., died October 1st, 1899.
1866—Williamson, Walter M., M. D., died December 19th, 1870.
1866—Williamson, Walter, M. D., died May 5th, 1874.
1868—Wood, James B., M. D., died April 14th, 1889.
1904—Yerkes, Frank E., M. D., died December 22d, 1904.
1897—Yetter, A. F., M. D., died May 8th, 1898.
1874—Young, J. H., M. D., died June 21st, 1894.
1880—Zerns, Wm. M., M. D., died September 21st, 1887.

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MEMBERS AND VISITORS REGISTERED AT THE MEETING.

G. S. Africa.
Russell B. Armor.

A. W. Baily.
W. F. Baker.
Ralph Bernstein.
N. S. Betts.
J. T. Biddle.
C. Albert Bigler, Jr.
C. F. Bingaman.
W. S. Bingaman.
Hudson D. Bishop.
Jas. A. Black.
T. L. Blair.
W. W. Blair.
W. B. Boggess.
A. P. Bowie.
Francis W. Boyer.
G. M. Bradford.
L. S. Brown.
H. B. Bryson.
J. T. Burnite.

J. C. Calhoun.
Webster Calvin.
Horace G. Carmalt.
T. H. Carmichael.
D. Christy.
Anna C. Clarke.
Mary E. Coffin.
Hills Cole.
W. H. Cooper.

E. H. Douds.
John A. Douglass.

H. R. Edwards.
F. B. Edmundson.
W. F. Edmundson.

J. D. Elliott.

M. M. Fleagle.
R. K. Fleming.

Verner S. Gaggin.
J. C. Gaston.
F. E. Gladwin.
Ella D. Goff.
Mrs. M. B. Goff.
E. M. Gramm.
George W. Guthrie.

Oliver S. Haines.
S. Hamilton, Jr.
D. R. Harris.
J. E. Hennington.
C. H. Hofman.
J. Richey Horner.
A. F. P. Huston.

W. W. Insley.

M. R. Jamison.
Anna Johnston.
J. F. Johnston.

Bayard Knerr.
F. W. Koons.

N. F. Lane.
M. W. Livingston.
Julia C. Loos.

Watson Marshall.
W. Joline Martin.
J. M. Maurer.
George W. Maust.
L. E. McBride.

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E. S. McCauley.
J. C. McCauley.
J. B. McClelland.
J. H. McClelland.
R. W. McClelland.
William McCracken.
J. McEldowney.
W. C. Mercer.
Z. T. Miller.
Thomas Minahan.
J. E. Moore.
George B. Moreland.
F. S. Morris.
J. Murphy.
F. L. Muth.

H. S. Nicholson.

H. J. O'Donnell.

J. K. M. Perrine.
R. L. Piper.
W. S. Piper.
Trimble Pratt.

F. B. Quackenbush.

C. M. Rhodes.
C. S. Raue.

C. W. Sager.
Clyde W. Sample.
B. F. Sankey.
F. C. Sawers.
Henry F. Schantz.
H. D. Schell.
W. A. Seibert.
C. P. Seip.
H. H. Seip.
W. B. Shepard.
L. H. Sterner.
Mrs. L. H. Sterner.

W. T. Talbot.
J. H. Thompson.
Landreth W. Thompson.
Leon Thurston.
John J. Tuller.

Gustave A. Van Lennep.
Anna D. Varner.

J. A. Walter.
G. Harlan Wells.
Louis Willard.
Clara H. Williams.

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PAPERS

AND

DISCUSSIONS

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REPORT OF THE

SECTION OF SURGERY.

The Technique of Cæsarean Section, by J. H. McClelland, M. D.
Anal Fissure, by C. A. Bigler, Jr., M. D.
Intestinal Perforation in Typhoid Fever, by J. D. Elliott, M. D.
Some Notes on Carcinoma, by Bayard Knerr, M. D.
Acute Infective or Suppurative Osteomyelitis, by J. H. Thompson, M. D.
Appendicostomy; Its Indications and Technique, by G. A. Van Lennep, M. D.

THE TECHNIQUE OF CÆSAREAN SECTION.

J. H. MCCLELLAND, M. D., PITTSBURG.

When we call to mind the work of Lungren, of Toledo, Ohio, and Ludlam, of Chicago, in this interesting field, and more recently the contributions of H. F. Biggar and Florence Ward, all of our own school, we almost imagine the operation of the Cæsarean section is modern, and yet how ancient!

The exact technic to be observed, however, is a matter of very present concern, and should be "ready for use."

I have been requested to briefly set forth the usual procedure now in vogue in our institution.

TIME.

As a rule, the case should be allowed to come to term, but should be taken at the first symptoms of labor. This will admit of deliberate preparation, with selection of time and place, a matter of much importance. With a hospital equipment at command, the chance of a favorable issue is greatly increased. Many cases must, however, be done on sight and with scant preparation.

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PREPARATION.

The patient is prepared much as in an ordinary cœliotomy, taking special pains to empty the bladder, clear the bowel and irrigate the vagina. A number 18 (French) rubber catheter, an enema of slightly saline water and a douche of bichloride solution, one to four thousand, will fill these requirements. The abdomen is to be scrubbed with liquid soap and then rubbed with ether, alcohol and perhaps a bichloride or other antiseptic solution.

ASSISTANTS.

It is of paramount importance to have plenty of assistance, as celerity of movement is most desirable, and often determines the success of the operation.

There should be when possible a first, a second and a third assistant and an anæsthetist in addition. The duties of each should be definitely fixed, and each should be instructed in advance and assigned to his place. The *first assistant* should give close attention to the several steps of the operation, and follow the movements and directions of the chief promptly. The *second assistant* should hand instruments, sponges. etc., and be available as required. The *third assistant* should receive the babe and be prepared to resuscitate it if necessary. A tank of oxygen is most valuable; but care should be taken that the oxygen is diluted with air and is introduced into the infant's lungs with moderate force.

INSTRUMENTS, ETC.

The usual outfit of instruments for a laparotomy should be at hand and should include two long Pean forceps or clamps with rubber protected blades, the use of which will be indicated later.

An extra number of needles should be provided and be threaded in order to facilitate the rapid closing of the uterine wound.

I prefer No. 2 or No. 3 chromicized catgut for this purpose. A pair of good, large scissors should be at hand to rapidly enlarge the uterine wound between two fingers as soon as an opening has been made.

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Gauze sponges must be at hand in abundance and be quickly supplied. Two or three rolls of gauze are very useful.

THE OPERATION.

The abdominal incision should be free, six or eight inches long, and rapidly made. There is usually little bleeding, but any spouting points can be quickly "clipped."

The uterus is now in view, and the long rolls of gauze should be thrown around it like a scarf in order to crowd back the intestines and prevent fluids from entering the abdominal cavity.

The Pean forceps now come into play. With one pair the broad ligament on one side is clamped tightly, and the other pair is placed on the other side by the first assistant or the operator, ready to be shut down at the word.

With a good broad knife now make a straight sweep down the median line of the uterus the required length, about five inches (12 to 15 centimeters) long, not going entirely through the uterine wall except at the lower end of the incision. Introduce two fingers at this point and run up the wound, completing the incision, with a pair of scissors. Care is to be taken that the uterus has not rotated out of line or the incision will be to one side.

Care must also be taken to avoid the bladder. The hand is now passed into the uterus, the infant taken by the feet and promptly extracted.

The cord is clamped (use a clip instead of a ligature), severed on the maternal side of the clip, and the infant handed to the third assistant. It should not take over three minutes to deliver the child.

At this instant the second Pean clamp is shut down on the broad ligament, and thus all hæmorrhage is controlled.

The operator now proceeds to deliver the secundines, carefully separating the membranes from the uterine wall.

With a large gauze sponge, wet in a saline solution, wipe out the uterus, and if the organ is to be saved you are now ready for the sutures, the first assistant being busy in the meantime, making pressure around the uterus, keeping in the intestines, and keeping the fluids out of the abdominal cavity.

Attention is called to the use of the Pean clamps as in every way

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superior to the rubber cord, which latter has indeed been discarded by many surgeons.

These clamps are quickly applied and effectively control the hæmorrhage, and are useful whether the uterus is to be preserved or removed. Chromicized catgut No. 2 is used (interrupted sutures). and includes in the first layer the muscular coat close to the edge of the mucous membrane. A second layer is then run, making with the peritoneal coat a lembert suture.

If a modified Porro is necessary on account of septic conditions or a bad condition of the uterus from prolonged labor, the clamps are left in place until the uterus is removed, and the ligatures are in place.

The abdomen is carefully mopped out with saline solution and the peritoneum brought together with a continuous catgut suture.

The abdominal wall complete is now united with interrupted silk worm gut.

The wound is dressed in the usual way, *i. e.*, silver foil covering the incision, sterile gauze covering the abdomen, and the whole thoroughly strapped with adhesive plaster.

MODIFIED PORRO OPERATION.

The propriety of removing the uterus and adnexa may well be considered. The operation is as quickly done as the more conservative one, and the chances of recovery are fully as good, in some instances better. If the labor has been prolonged, and futile efforts at delivery have been made, giving opportunity for septic conditions to have supervened or such conditions are palpably present, the modified Porro should be performed. Also if there is a particularly lax condition, entire want of contractility, then it is safer to remove the uterus. This can be done easily and quickly. The clamps are already in position, the broad ligaments are tied off and divided, and the usual liberal provision of peritoneum is left to cover the uterine stump. I use interrupted catgut sutures in two layers to close over the stump, and then cover it with peritoneum secured by a continuous suture of fine catgut. The stumps of the broad ligaments are also turned in and whipped over with fine catgut.

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DISCUSSION.

DR. W. A. STEWART: I have had several cases of Cæsarean section, and there is one point concerning them which I would like to emphasize. When the uterus is septic we should perform a hysterectomy. One case in particular in which the forceps had been used several hours previously and the uterus was septic. We hesitated to perform the operation and the patient died. So far as technique is concerned, that laid down by Dr. McClelland is the one I have always followed. I thoroughly agree with Dr. McClelland that the measurements of the pelvis should be determined early during pregnancy. If these measurements show that the patient is not able to be delivered spontaneously, the operation should be performed and then we would have a clean case. If undertaken under these conditions it is as safe an operation as can be done. If the cases become septic the death rate must necessarily be very high.

DR. J. H. MCCLELLAND: I have nothing special to add but to call attention to the method of shutting off hæmorrhage without doing any injury to the tissues. Another point is that we gain time. It is very exceptional for a case to take more than three minutes from the time the knife is taken up until the child is delivered. Success depends upon celerity of movements.

ANAL FISSURE.

C. ALBERT BIGLER, JR., M. D., PHILADELPHIA.

The heading of this article refers to a lesion named by Allingham, "Irritable Ulcer," and very appropriately so, for this designation describes accurately its true pathological nature. It is so called because of its exquisite sensitiveness, due to irritation of the exposed sensory nerves by the passage of fæces over its surface, the escape of gases, or from voluntary or involuntary acts, such as laughing, coughing, sneezing or straining, which woud cause the external sphincter fibers to contract.

This characteristic feature of anal fissure, or irritable ulcer, if you please, can be readily demonstrated by examining a patient

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with this condition, for no matter how skilful or gentle we may be in introducing the finger within the anal orifice, at the same time exercising the greatest care to bring its point of contact at the most remote part from the ulcer, we can seldom avoid giving pain. Indeed, this feature is at times so pronounced that an examination is rendered impossible without first applying at least a local anæsthetic.

From the fact that some of these ulcers cause less suffering than others, Gosselin and Molliere, each distinguishing between the acutely sensitive lesions and those that are less so, suggested the terms "tolerant and intolerant" ulcers and "tolerable and intolerable" ulcers respectively. To fully appreciate this distinction, it is necessary to have a knowledge of the position and distribution of the nerves at the lower end of the rectum. Hilton first called attention to the fact that these nerves come down below the internal sphincter muscle and pass out at its inferior border between it and its fellow, the external sphincter, where the terminal filaments spread out over the latter muscle, mucous membrane and papillæ. From this brief description it will be seen that a break in continuity of the orifice must of necessity expose one or more sensitive nerve twigs and as they convey impulses which control the action of the sphincter, we can readily understand why, from over-stimulation, it is inevitably found spasmodically contracted when a lesion is located within its grasp. On the other hand, an ulceration can exist above the external sphincter without producing any pain.

A typical anal fissure is usually single, but there may be two or more present at the same time. It appears as a more or less superficial ulcer, located at or near the junction of the skin and mucous membrane (Hilton's white line), in the sulci between the radiating folds, into which the anal orifice is thrown by the contraction of the external sphincter. It may be either elliptical, pear-shaped, linear, oval, circular, or triangular in form, although Quenu and Hartmann, after a careful study of this subject, are of the opinion that were the fissures dissected out and laid flat upon a block, they would be either elliptical or circular in form; that the elongated shape is only apparent and is due to the fact that the ulcer is within the bite of the sphincter muscle. The edges may or may not be indurated, but are inflamed and are folded into the wound from muscular con-

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traction. Its base is either bright red or greyish in color, with a thin layer of mucus, serum, blood or pus, or a combination of any of these, smeared upon its surface.

The lesion extends parallel with the long axis of the anal canal. Its length varies from one-quarter to three-quarters of an inch; and its depth from a simple abrasion to an actual laceration of the sub-mucous and sub-cutaneous connective tissue, laying bare the muscular fibers.

At the lower angle of the fissure there will sometimes be noticed an inflamed and painful cutaneous tag. Because of its resemblance to a variety of external hæmorrhoids and that immediately above it will be seen a fissure. Brodie named this tag the "Sentinel Pile," which name it has since held. Ball claims that it is due to the tearing down of an anal pocket and that its presence could always be determined, while Goodsall and Miles are of the opinion that the small tumor is merely œdematous skin, the result of venous and lymphatic obstruction; that it will often be seen in other diseases, such as piles, pruritus and eczema, and that its presence is by no means so frequent an accompaniment of fissure as Ball has observed; as a matter of fact, it has been the exception rather than the rule. Their statistics show that in 221 cases, in only 14 was it present.

An irritable ulcer may be located at any point in the anal circumference. Those situated anteriorly are usually in females, but the majority will be found in the posterior commissure, immediately to the right and left of the median line. This preponderance is accounted for from the fact that the anus posteriorly is less movable, being more or less firmly attached to the coccyx, by the ano-coccygeal ligaments, and that the direction of the canal above is backward, hence a greater strain is thrown upon this region from pressure of the mass in the rectal ampulla, and from over-distention during its evacuation.

It occurs at all ages, but is more common in adults. When found in infants and children, hereditary syphilis should be suspected. As to sex, most proctologists agree that it is more prevalent in females than in males. Allingham, Smith, Van Buren, Kelsey, Cripps, Gosselin, Ball and Tuttle are of this opinion, while Goodsall and Miles and Gant have met with a greater number in the opposite

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sex. Within the past three years, fifty-two patients were treated by the writer for fissure, both in the out-patient department of the Hahnemann Hospital, and in private practice. Of this number thirty were females and twenty-two males. Five were located in the anterior quadrant (median line), all women; two in the left quadrant, three in the right quadrant and the balance in the posterior wall, (42), ten directly in the middle line and the remainder (32) immediately to the right and left of this line. The writer also saw thirty-eight cases of fissure in St. Mark's Hospital, London, during the months of August, 1905, 1906, and 1907. Of this number twenty-two were females, fifteen males and one in a syphilitic little girl with an enormous condylomatous growth completely surrounding the anus and extending laterally as far as the tuber-ischii on either side. That the greater percentage of this disease is found in females is thought to be due to two factors; that constipation is more prevalent and that their integument is thinner and more easily lacerated.

As to etiological factors capable of producing fissure, it may be said that any diseased condition which would tend to irritate or weaken the tissues at the muco-cutaneous junction, rendering them dry and less pliable, would act as predisposing causes. These include leucorrheal or gonorrheal discharges in the female; some of the skin diseases, as pruritus ani, herpetic vesicle, psoriasis and eczema; discharges from fistulæ, proctitis, colitis, and from dysenteric, syphilitic, tubercular and malignant ulcerations; from an irritable, contracted external sphincter, due to the lodgment of a foreign body in the lower anal canal, or to a polypus that is within the grasp of this muscle. Also from procidentia recti, stricture and disease of adjacent organs, as well as a congenital narrowing of the anal orifice.

The exciting causes are in the majority of instances dependent upon traumatism, chief among which is evacuation of a large, hard, dry stool which has not been moulded to the capacity of the outlet and when the evacuation finally occurs the mucous membrane has been overstretched and torn. The same result may be brought about by the fingers or instruments; the rough introduction of the syringe nozzle; tearing the parts from the use of improper detergent material; operations for fistulæ and hæmorrhoids and from the descent of the child's head during parturition.

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There is perhaps no disease to which humanity is heir, at least located in the ano-rectal region, and certainly none so apparently insignificant in appearance, that causes a greater amount of suffering and general miserableness than irritable ulcer, unless it be its analogue, the one on the cornea. From a group of symptoms which are practically always found associated with this lesion, namely, pain, irritable sphincter, constipation, irritating discharges, with itching of the parts, and reflex symptoms, these subjects are often reduced to a state of chronic invalidism and when the physician, as is often the case, is finally consulted, he not unfrequently sees an emaciated, cachectic, melancholic, nervous and exhausted individual who gives the appearance of malignancy rather than a simple little fissure.

Of the many symptoms for which a fissure is responsible, the one that stands out in bold relief and upon which we are able to determine its presence with almost absolute certainty is the peculiar paroxysmal pain, although a physical examination of the anus and rectum should never be omitted, however characteristic the subjective phenomena may appear. The most striking feature of the pain is that it invariably occurs during or after a bowel movement and persists for periods ranging from a half hour until the next action of the bowels. The pain is described by some as burning, cutting or sticking which is localized at the site of the lesion, while in others a dull ache or throbbing sensation similar to that of an aching tooth, referred to the sacrum, thigh or leg, is complained of. As a rule, the pain ceases abruptly and does not tend to recur until the bowels again move.

Constipation is a constant feature of the disease and its cause is self-explanatory. Defecation is very naturally postponed as long as possible because of the inevitable pain that follows a motion, thus the constipated habit is formed, which condition, for obvious reasons, only adds fuel to the flame. Sphincteric irritability has been previously referred to. Acrid discharges cause an itching of the anus and adjacent parts and is a very annoying symptom. For its relief scratching is resorted to, which accounts for excoriations at the anal margin, sometimes seen in conjunction with fissure. Hæmorrhage is seldom severe, although bleeding may be quite profuse, especially at the time the rent occurs, otherwise it is an inconstant symptom.

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Reflex symptoms are readily explainable. According to Hilton, the exposed sensory nerves receive impressions and convey them to the same centre of the cord from which spring the sciatic, lumbar and ilio-lumbar, including the motor nerves of the external sphincter as well as the lower extremities and bladder. This accounts for the retention of urine following operations upon the rectum, also the pains referred to the thigh, leg and back, so characteristic of rectal diseases. It also explains the spasmodic contractions of the external sphincter when the nerves supplying this muscle are irritated reflexly from diseases located in the urethra.

In considering the treatment of this distressing lesion it is gratifying to state that there is no surgical disease that responds more readily to the proper operative interference than this one. A speedy cure can be effected by making a straight incision through the base of the ulcer of sufficient depth to sever the underlying fibers of the external sphincter muscle and long enough to include about one-half inch of skin in the cut. Any overhanging edges are scissored off, as well as a sentinel pile and when any complications exist, as a polypus, papilloma, etc., their removal may be accomplished at the same time. Every second or third day the wound is cleansed with bichloride of mercury solution and stimulated with iodoform powder. This operation can be performed in a practically painless manner by the injection of a local anæsthetic beneath the base of the ulcer, but it is unquestionably more satisfactory both for the patient and the surgeon when a general anæsthetic is given and the recumbent position is enjoined for a few days afterward. In most cases nitrous-oxide gas is sufficient.

The bowels should receive careful attention, particularly while the wound is healing. A good plan is to encourage the patient not to have a movement for forty-eight hours and then an enema of warm water followed by an injection of six ounces of olive oil is given. This should be retained as long as possible and immediately upon its evacuation the wound is redressed in the same manner as above stated. The bowels should move regularly, one soft motion daily being desirable, but this will be found a very difficult matter to accomplish, as most of the patients are chronically constipated. Any one of the following remedies has proved efficient in the writer's practice to regulate the number and consistency of the stools:

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Castor oil, fluid extract of cascara, cascara with malt, phosphate of soda, compound licorice powder, confection of black pepper and senna (equal parts), olive oil, carabana and hunyadi waters. It is necessary to experiment with each patient the amount of the laxative to be given, for what may produce a severe diarrhœa in one may have no effect upon another. Occasionally these agents fail when the use of an enema of water, either alone or with soap suds or glycerine is necessary. A diet consisting of milk, cream, soups, eggs, fruits, in fact all articles of food that are known to have no constipating or diarrhœal effect, should be indulged in and the ingestion of much water may aid materially in softening the intestinal contents.

Divulsion as a means of curing anal fissure has won much favor because it is a non-cutting operation, no instruments are required and little if any after treatment is necessary. In these respects this method has no equal and were it not for the fact that its usefulness is limited to carefully selected cases only, it is doubtful if any other operation would be employed. Unfortunately, however, in only those cases where the fissure is of recent occurrence, without hypertrophied muscles, indurated edges and base and uncomplicated, should it be attempted, otherwise failure will frequently follow and an excellent method when intelligently used will thereby be brought into bad repute.

For the benefit of patients who are unalterably opposed to operation, however slight it may be, recourse may be had to local applications, although it is advisable to avoid this line of treatment when possible. A conical fenestrated speculum is introduced within the anal canal and the slide is removed, when the fissure in its entirety is in full view. Having anæsthetized the ulcer with solutions of cocaine or eucaine or powders of orthoform or anæsthesine, a pledget of cotton saturated with pure ichthyol is applied to the diseased area. This is repeated every two or three days, and if at the end of four to six weeks the fissure has not healed it is doubtful if it ever will until a radical operation is performed. Other agents that have given satisfaction are argyrol, balsam of Peru, lignol, iodoform powder, bichloride of mercury and silver nitrate, the latter in stick form or in solution.

Permit me to add the history of one case which, while extreme

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in character, will serve to illustrate most of the statements made in this paper.

Some months ago a female, age 45 years, consulted me for pains in the rectum. She was greatly emaciated, her face was pinched, complexion sallow, was very nervous and altogether presented a pitiful sight. She stated that as near as she could remember she had been a sufferer for seventeen years; that during that period with but few exceptions she had not had a natural bowel movement, that she had relied upon copious injections of soap and water and at intervals ranging from five to seven days. The tormenting pain that followed was so severe as to keep her in bed for twenty-four hours thereafter. Questioned why she had not sought surgical treatment before, she replied that she thought she had a cancer and that nothing could be done for her, and also that her dread to undergo an examination could not be overcome until eventually her tortures were unbearable, at which time she applied for treatment. On examination of the parts, an inflamed "sentinel pile" was seen, located in the median line posteriorly, and above it there lay a deep fissure, in which were seen the fibres of the external sphincter. On withdrawing the finger, introduced for the purpose of detecting any complication in the rectum, a polypus followed it. Under nitrous oxide gas the muscles were divulsed, the "sentinel pile" overhanging and indurated edges were excised, the exposed fibers in the ulcer were divided and the polypus snared. It may be of interest to note that in three months time she had gained thirty pounds, and that her rectal functions were performing normally and with comfort.

DISCUSSION.

DR. G. B. MORELAND: I can hardly say anything about the cause of fissure that has not been covered by Dr. Bigler. So far as treatment is concerned, I have found that divulsion in almost every case has proved entirely satisfactory. Divulsion not only relieves the pain of the fissure, but if the fissure is somewhat indurated it permits of the use of local stimulation. I have never as yet used the cutting operation. I have no doubt that in the experience of other men they may meet with cases that will not respond to divulsion. If such

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be the case, one can have recourse to the operative method. There is one feature to which I should like to call your attention, and that is the fact that a great many cases have been wrongly diagnosed. We should insist very strongly upon the examination of all cases complaining of rectal trouble, no matter what it may be.

DR. T. H. CARMICHAEL: From a medical point of view, for the relief of pain I have used tincture of Ratanhia on pellets with considerable success.

DR. MCCLELLAND: I have used the drug in several cases of this kind.

INTESTINAL PERFORATION IN TYPHOID FEVER.

JOHN DEAN ELLIOTT, M. D., PHILADELPHIA.

Twenty-three years have passed since Leyden advised operation for perforating typhoid ulcer and Mikulicz reported the first successful case, but, though much progress has been made since then, the proper importance has not been accorded the surgical treatment of this most dangerous complication. With our modern methods and increased knowledge the death rate of typhoid fever has been steadily falling, but in this respect it has not been as correspondingly great, so that the ratio between deaths from perforation and those due to other causes is becoming smaller. The operative mortality has come down from 90 per cent. until now it is certainly as low as 75 per cent., indeed, from collections of reported cases, less than 70, but allowance must be madde for the fatalities which never reach print. On the other hand, a number of patients die after operation when the perforation and the concomitant peritonitis have been completely cured, but in whom the typhoid toxæmia has been the lethal agent. The conditions at post-mortem have not been thoroughly enough studied, at least very few detailed reports can be obtained, and it is evidently unfair to place the responsibility for the fatal outcome upon an operation when the patient has recovered completely from its shock, and there remains no evidence of peritonitis, microscopically, macroscopically or bacteriologically. It will only be through such examinations that the true operative mortality will be determined, and it is possible to make them in almost every in-

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stance, through the abdominal wound, if permission for a complete autopsy cannot be obtained.

When we consider that one-eighth of the deaths from typhoid fever are due to this complication, and that in the United States the mortality from this disease amounts to nearly forty thousand per annum, the importance of any method of treatment which will save one-quarter of the perforative class must be appreciated. Occasionally a non-operative cure will take place, but this must of necessity be a rarity, less than one in a thousand. Very few authenticated instances are on record, and they must bear good proof to be of value, for many clinical diagnoses have turned out to be wrong, both on the post-mortem table and at operation. Within the last year I saw one of these so-called cures of nature at an autopsy held by Dr. C. F. Rau, at Hahnemann Hospital, upon a patient who had died of a general peritonitis following a perforation. The peritonitis was present and the opening easily found, but, upon further examination, an older perforation, almost at the ileo-cæcal junction, was made out, which was completely occluded by the firm attachment of the omentum, and showed evidences of repair being safely under way. When a diagnosis of perforation has been made the treatment is the same as in similar lesions from appendicitis, gunshot wounds, etc., and surely none of these conditions can be left to nature.

The pathology of typhoid fever was placed upon a sound basis by Mallory, who showed definitely that the enlargement of the lymphoid structure of the intestine is due to the toxins, producing a hyperplasia of large, nucleated, endothelial cells, both in the lymphatic apparatus and the blood vessels, which have a marked phagocytic power and absorb and destroy the surrounding lymphocytes so they can only be seen where the endothelial cells have not proliferated. This hyperplasia occurs in all of the lymphoid structures until these cells are present in large numbers in the dense fibrous tissues of the submucosa, beneath the patches of Peyer and the solitary follicles, and for some little distance peripherally, even beyond the limits of the lymphoid tissue. In the muscular coats this cellular increase is most noticeable along the lymphatic vessels and the lymphatic spaces around and near the blood vessels, while subperitoneal collections are found usually only underneath Peyer's patches. In the

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milder cases these cells undergo fatty degeneration and rapidly disappear; but in the more severe those in the lymphatic vessels, which by the tenth day are distended by them, first undergo degeneration and are then bound together by fibrin, forming thrombi, which more or less completely arrest the lymphatic flow. Beneath the lining endothelium of the large and small veins there are collections of these cells in what must be lymph spaces or vessels, which project into the lumen. When these become necrotic, especially if the endothelium of the vessel is destroyed, they constitute centers for the origin of fibrin, from which a clot forms occluding these vessels and by extension also the capillaries. The parts cut off from their blood supply quickly undergo necrosis, and thus a typical typhoid ulcer develops. It is at this period that the polymorphonuclear leukocytes, which have previously shown a surprising absence, appear in large ulcers near the surface of the necroses where the intestinal bacteria are invading the necrotic tissue. Fisher has observed thrombi from the agglutination of red blood cells in experimental infections with the typhoid bacillus, and Flexner has found what he terms unmistakable evidences of agglutination of red corpuscles in the blood vessels of the intestines and other organs in typhoid fever. What causes this agglutination, and how much it has to do with the formation of the thrombi, and hence the ulcers, has not yet been determined. If the process has included all of the coats a large perforation develops, and this variety is frequent at this time, but if the ulceration is shallow and gradually involves the whole thickness of the wall a smaller, perhaps pin-point, opening results, which may be preceded by a plastic peritonitis, causing a gluing to neighboring gut or omentum, or an abscess limited by adhesions. If this does not take place, and unfortunately it seldom does, a non-limited peritonitis follows. On account of the nobility of the ileum and its comparatively unprotected position, and, possibly, on account of the kind of bacterial infection, adhesions do not form so readily as in appendicitis. In the vast majority of cases the perforation is situated in the lower three feet of the ileum, next in frequency in the cæcum or appendix, but it may be met in any part of the intestine, even the sigmoid flexure. Fortunately they are usualy single, although as high as twenty-five have been encountered, and they are almost invariably opposite the mesenteric attach-

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ment; however, one case ruptured between the layers of the mesentery and closely resembled a suppurating gland. The intestinal walls may be several times their ordinary thickness, and so friable that sutures easily cut out, or from much ulceration, may be almost as thin as paper.

Reverting to the question of the slow progress made by surgery in the treatment of this condition, the principal answer lies in the difficulty of making an early, accurate diagnosis; it is easy to recognize a general peritonitis, but then the chances of recovery are slight. A number of factors produce this difficulty, delirium, apathy and stupor from a profound toxæmia may make an exact diagnosis impossible, but these are the cases with the least hope; many are allowed to die because they are not carefully enough watched, and the surgeon is too often called into consultation only to find an already moribund patient. There is little that is new in the diagnosis to-day, and it appears doubtful if any pathognomonic symptoms will soon be discovered, but the death rate can be greatly improved if a proper use is made of those at hand and every patient is thoroughly studied. Each one should be carefully examined day by day, so that the amount of abdominal pain, tenderness, rigidity and distention is known, and if a perforation is suspected the difference in any of them can be accurately judged in that particular preson. In hospitals and wherever else possible, it would be a splendid plan to have the surgeon examine all serious typhoid fever patients with the physician and thus familiarize himself with them. Then if a perforation is suspected and the physician cannot be reached at once, the surgeon can be called and will be in a position to make an immediate diagnosis. It must be remembered that the first and most important requisite of success is an early operation, and two or three wasted hours may decide between a favorable or a fatal outcome.

Pain, preceded perhaps by a history of a cold bath, straining at stool, or some form of exertion, is the first symptoms to attract attention in a very large proportion of cases, and is characterized by its sudden onset, its great severity and its persistence over a considerable period, though after an hour or two there is usually an amelioration. Occasionally it is paroxysmal, and with apathy or delirium it is slower in approach, less itense, and in a small percentage may even be entirely absent or overlooked. Primarily the

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whole abdomen is affected, though in the male the pain may be referred to the genitalia, especially the bladder or the end of the penis, but later it becomes most intense in the right lower quadrant.

Rigidity appears almost as quickly as pain, and, differing from appendicitis, is a more valuable symptom than tenderness, as it is less influenced by the typhoid state. All of the abdominal muscles may participate, but careful palpation will demonstrate an accentuation over the lesion so that the right rectus is the one most involved. Sometimes it is so prominent that it will stand out like a board, and again it is only possible to make out a difference between it and its fellow by palpating close to its insertion into the rib border.

Tenderness must be placed last in this great trio, for it is more often absent than either of the others. When present it is invaluable, and like them it may be general over the abdomen, but is most marked over the point of rupture. Any or all of these symptoms are at times present during the cource of typhoid fever without a perforation, and the knowledge of the previous condition of the greatest help in arriving at a conclusion. But when a typhoid patient, from no known cause, develops sudden, severe abdominal pain, lasting for an hour or two, especially if accompanied with rigidity and tenderness, a perforation has almost certainly taken place.

Shock is practically always present to a greater or less degree and will be evinced by the appearance of the patient; the face assumes a peculiar pallor and drawn look, the lips are cyanotic, until, as the peritonitis spreads, this gradually blends into the facies Hippocratica. The patient becomes restless, is chilly or shivers a little, begins to perspire or may be bathed in a cold sweat, while the pulse increases in rapidity, and at the same time gets weaker and smaller to the examining finger. This last is a sign of the utmost importance. The more toxic the patient the less will this group be discernible, but it is possible to recognize some change even then.

The temperature does not appear to be of much value, for the old teaching of a sudden and marked fall has not been borne out clinically. Such a fall points rather to a hæmorrhage than a perforation. A rise or fall of two degrees may be noted, but such a change is far from unusual during the course of typhoid fever, and can throw little light upon a diagnosis. Some authors still claim there is a sudden recession of a number of degrees, but that it is so transient

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as to be often overlooked. This appears extremely doubtful from the number of observations to the contrary, and even if true, must be of slight value. Nausea and vomiting are present so infrequently in this complication, and may be present during typhoid fever, especially with severe abdominal pain, that little credence can be given to their presence and none to their absence. The same applies to distention unless very suddenly developed, although if free gas can be demonstrated in the abdominal cavity it is pathognomonic of intestinal rupture. Absence of liver dulness is not conclusive of this, as distended gut may cause it when the intestinal wall is intact. Tympany over the liver in the midaxillary line will point more strongly to it than in any other location, for a distended loop of intestine is less likely to be found here. Harte and Ashurst have found suddenly deevloped, well marked, movable dulness in the flanks of value in some instances, but it is hard to be certain that the fluid is not contained within the lumen. Respiratory changes are of more importance, always the respirations assume a costo-abdominal type which gradually merges into the costal as the peritonitis progresses. It may be present with rigidity of the abdominal muscles and distention, but shows an increase with perforation. It is well to make this observation when the patient's attention is divered, for he may unintentionally change the style of breathing of his own volition.

The study of the blood has been disappointing, for little information can be gleaned from it. No change in the leucocyte count, or even a differential count, takes place in many of the cases, and in others it is too slight to place much dependence upon. At times there is an actual decrease in the leucocytes, and occasionally a leucocytosis may develop from unascertainable causes and be misleading. Very weak patients, whose powers of recuperation are depleted, and in whom such a symptom would be most useful, show the least change. In the stronger a steady rise in the number of leucocytes comes on with a peritonitis. A wave of leucocytosis, which rapidly reaches its height and as quickly recedes, has been described as happening immediately after all perforations, but whether this is true remains for the future to decide. To be of any use the blood count must be known previous to the suspected perforation must be made immediately and frequently after it has taken place. There

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is often a rise in the blood pressure, but this has been recorded in numerous instances with a similar train of symptoms when the intestine was whole.

There remains one other method of diagnosis which must be considered, the exploratory incision. I cannot agree with those who speak lightly of this procedure in such a serious condition as typhoid fever, for I believe that indiscriminate and unnecessary laparotomies must detract from the chances of recovery to a certain extent, for every such operation is accompanied by some shock and depression of exploratory section with negative results is safer in experienced vitality. Yet it may be said on the other hand, that an occasional hands than the procrastination that so far has been the order of the day. Then the incision should be generous enough to allow a visual examination of the field, for a three-inch opening through the abdominal wall is attended with fewer bad results than undue handling of diseased intestine without sufficient working room.

Whether to use a local or a general anæsthetic is a much discussed question. With the former the mental effect must be reckoned with and rigidity of the muscles cannot be overcome, making the operation more difficult and requiring longer time. The great objection made to the use of a general anæsthetic is the shock. Some shock will follow under either method, but with an experienced anæsthetist it will be reduced to a minimum with ether. I believe too much consideration is directed to the kind of anæsthetic, and not enough to the manner in which it is given. It is in just such cases as these that the expert anæsthetist proves his great value, for he produces unconsciousness and relaxation with a minimum amount and the patient may even leave the table in better condition than when placed upon it, the ether acting as a stimulate to a weakened heart.

The best incision is through the outer side of the right rectus muscle or the right linea semilunaris. The cæcum should first be drawn into the wound, for it is better to begin the search at a known point than to pick up a loop of intestine at haphazard. After examining the cæcum and appendix the ileum should be brought into view for the distance of three feet, and if no perforation is found this portion should be retraced and examined with the utmost care, for the opening may be minute or hidden by a patch of lymph. The

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upper end of the part examined should be kept outside to be used as a starting point for further search, but the rest is replaced as soon as it is found to be intact. If no perforation is found the next step depends upon the local signs of infection and the patient's general condition. Perforations occur but rarely in other regions and complete evisceration is fraught with danger to life. Usually an interrupted purse string suture, in larger openings a row of mattress stitches reinforced by a continuous Lembert, is all that is required. Excision of the ulcer is unwarranted, it is time consuming and utterly useless. If the perforation cannot be closed longitudinally it may be possible to do so transversely with, I belive, little danger of a subsequent bothersome stricture. Constriction rarely follows typhoid fever, for the ulcers do not encircle the intestines, the contents of the ileum are fluid and can easily pass through any slight narrowing from kinking of the gut, and such narrowings are not progressive but rather tend to dilate. If these measures are not successful there remain the alternatives of fastening a tab of omentum over the opening, of making an artificial anus or of a resection. It has been suggested that in performing an enterostomy the diseased intestine be surrounded by gauze instead of attaching it to the abdominal wall. This method has several advantages and the combination of it with an omental flap would require the expenditure of little time and take care of any future leak. The mortality of resection will always be high, on account of the state of the patient and the unfavorable condition of the intestine, and has only a limited field. When possible a running row of Lembert sutures should be placed around all ulcers in which a perforation appears probable. As drainage is practically always necessary the wound is best left open, and when it is clean the pack can be removed and the edges drawn together with a secondary suture. The after-treatment is too large a subject to be taken up at this time, but it is well shown in the report of a case which I have appended. Two and even three operations have been performed upon one patient with a successful outcome several times, so the decision of an operation for a subsequent perforation must depend upon the individual. In view of the paucity of the literature upon this subject I would like to present the report of a successful operation:

J. F., "barkeeper," well built man, five feet six inches tall and

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weighing 140 pounds, was referred to Hahnemann Hospital by Dr. W. C. Mercer, at 1:30 A. M., January 4, 1907. The following history was elicited, most of it subsequent to the operation: Father died of tuberculosis, otherwise family history was negative. He had never been ill until four weeks before his admission, when he began to feel "knocked out," had no appetite, and was constipated, but complained of no headache or pains. This continued for two weeks, when he remained in bed for several days, and then feeling better he returned to work, but was always tired and used stimulants to keep up. On January 3d, at 5:30 P. M., he was suddenly attacked with general abdominal pain, so severe that it caused him to roll about on the floor. In three-quarters of an hour it became easier and localized in the right iliac fossa. When admitted to the hospital a glycerine and water enema was expelled with a fluid stool containing free blood and some clots and accompanied with a little gas. He was markedly collapsed, face drawn and pale, temperature 103°, pulse 136 and weak, respirations 26, slightly shallow and costal in character, and he suffered from a dry, hacking cough. His tongue was coated and flabby and showed the imprints of the teeth. The abdomen was distended and tympanitic, though liver dulness was present, was tender and rigid all over, but tenderness was exquisite over McBurney's point, and the right rectus muscle felt like the proverbial iron band. There were a few rose spots and on the chest a considerable acne eruption. Examination of the liver, spleen and lungs was negative except for a few bronchial rales. He showed no hesitancy in pointing to the right iliac fossa as the seat of the greatest pain.

Immediate preparations were made for operation and under ether the abdomen was entered by a three-inch incision through the right semilunaris when a large amount of thin, yellow, serous pus was evacuated. The cæcum was delivered, the appendix showed only congestion and dilatation of its vessels and was evidently not the origin of the peritonitis. The wall of the ileum was intensely infiltrated and thickened (one-third of an inch), deeply injected and covered at numerous points with plastic exudate but was free of adhesions. Enlargement and swelling of the patches of Peyer and the solitary follicles could be distinguished, and in the center of one of the former about eight inches from the ileo-cæcal valve was a

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perforation, one-half an inch in diameter, through which the contents of the gut were escaping. Ten inches above was an ulcer covered by a base of dark, thickened peritoneum which appeared about ready to slough through. A continuous purse string suture was placed about the opening, but on account of the friable tissue it cut completely out when being tied. An attempt to close the perforation in the long axis of the bowel was not successful, as the thickened wall completely occluded the lumen, but a row of Lembert stitches placed transversely an inch from the edge of the opening brought the two peritoneal surfaces together, though with a marked bend. Under the circumstances it seemed better to ignore the threatened perforation than to interfere with it, so after quickly ligating the appendix three large iodoform drains were placed in the peritoneal cavity and a bichloride dressing applied. The temperature was 102 degrees, pulse 140, respiration 44, when the patient was returned to bed, the head of which was raised to 45 degrees, the exaggerated Fowler position, continuous enteroclysis was started and enough morphia given to insure quiet. The temperature and pulse fell steadily until at the end of the third day, the former was 99 degrees and the latter almost constantly under 100, but distention increased until it was enormous and the abdominal wall was hard and tense. Enteroclysis was continued intermittently, for it was not always retained, but nothing was given by the mouth, although the patient was allowed to suck cracked ice, but not to swallow the water. Except for severe pain at times, some nausea and occasional vomiting suffering was slight, thirst or hunger not being complained of. No effort was made to move the bowels but on the third day some of the saline solution, colored brown, was expelled and on the next day there were a number of such bowel movements with an offensive fæcal odor. During the third night the patient was restless and slightly delirious and his fingers showed a slight tremor. In the morning his mentality became clearer, the distention was less and the abdominal walls softer, but towards evening the emperature went to 101 degrees axillary and the pulse became more rapid, bounding but weaker, the pain was so intense that he cried out, he was covered with hot perspiration and was widly delirious. About ten o'clock he suddenly sprang out of bed and struggled with the nurses for several minutes before he could be overpowered. His temperature was 102 degrees and his pulse

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was so rapid and weak that it could not be counted. Strychnia was given hypodermically and hyoscyamus by the mouth. An abdominal examination showed nothing to warrant us suspecting another perforation, or at least a developing peritonitis, so he was strapped into bed and in spite of his efforts to get out of it his pulse improved and at seven A. M. was 116. An enema brought away some fæcal matter and a great quantity of gas, the abdomen became soft and flat and then diarrhœa supervened. I attributed his condition to the typhoid toxæmia, but Dr. Van Lennep the next morning diagnosed delirium tremens and at his suggestion spiritus frumenti was administered hourly with an abundance of highly seasoned liquid diet. This excited delirium lasted for forty-eight hours; meanwhile the pulse was becoming weaker and ranged between 100 and 120, and his temperature remained about 99 degrees in the axilla, until he fell into a sleep from which he awakened more quiet and rational and with a regular and fairly strong pulse. Improvement was continuous after this and on the 17th, the 14th day after operation, the pack was removed under ether and the wound completely closed with three layers of sutures. Except for a small superficial pocket of pus which caused the skin edges to slightly retract but did not interfere with the union of the muscles, his recovery was uneventful and he was discharged from the hospital the 31st of Jan., completely cured, except for two superficial areas, which granulating soon healed under treatment in the dispensary. A Widal made upon the day he left was negative; no blood count was made at the time of his admission, but those after the third day showed the leukocytes to number between 5,000 and 6,000. When seen several months later he had gained between twenty and thirty pounds and the scar was perfectly firm.

I wish to call particular attention to this method of closing abdominal incisions requiring drainage; it was originated by Dr. Van Lennep, and has been used in his clinic for the last fifteen years with most gratifying results. By leaving the wound completely open until drainage is no longer required the edges can be accurately approximated and healing takes place with the formation of almost as little scar tissue as with first intention. Even if only a small opening is left for a cigarette drain it must heal by granulation with a resulting weak point in the abdominal wall. Though apparently

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insignificant at the time, intra-abdominal tension too frequently causes the scar tissue to stretch with a resulting incisional hernia. It is not the size but the presence of such a weak spot that is of importance, as is well exemplified in hernia cerebri, which, as is well known, develops oftener through a small defect than a large one.

DISCUSSION.

DR D. P. MADDUX: It seems to me that in this paper, which is so full of valuable information, there is one point that we can not emphasize too strongly, for, after all, it is on the early diagnosis that the life of the patient must depend. The trinity of symptoms—pain, tenderness and rigidity—associated in these conditions of perforation shoud determine the diagnosis so that any change which might occur would not take the physician unawares.

DR. S. W. S. DINSMORE: This is a very valuable paper, particularly for physicians practicing in this community. One man claims to have treated forty-five cases of typhoid lately. Too much stress cannot be placed on the mere symptom of shock. I was called in to see a patient in the fourth week of typhoid fever, entirely collapsed, bathed in a cold perspiration and having all the classical symptoms, but he really did not have perforation. The great valuè of the paper to those practicing five or ten miles from a hospital is that it will enable them to diagnose the condition and give a prognosis. The young man to whom I referred was very tympanitic, but he had a steady, even pulse and not the thready pulse usually found in cases of shock.

DR. J. D. ELLIOTT: I just want to impres upon your minds that the cases should be studied from day to day.

SOME NOTES ON CARCINOMA.

BAYARD KNERR, M. D., PHILADELPHIA.

What a tragic picture the word conveys to our minds! The hopelessness, the suffering, and misery, relentlessly progressing toward an end which bring relief only through the passing of conscious life.

Since the dawn of medicine this dread affliction has claimed its toll

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of human happiness and life, and still continues to do so, almost unchecked, in spite of efforts of diligent as well as brilliant workers in the investigating field, eagerly hunting knowledge of its cause and how to master it. The effects we know, perhaps too well, and they are not pleasant to look upon, while we inwardly concede our helplessness to wage a winning battle in behalf of the victim whose hopes for rescue are entrusted to our care. These doomed ones cling to life even while realizing the nature of their malady, and hope daily for a change, or some newly discovered treatment that will turn their ebbing tide to one of flood.

One of the most pathetic examples of this occurred in a dear, old southern lady of 71, a mother and grandmother of a large family, and who sought solace in her declining years in the promises and inducements offered by the seductive teachings of "Christian science."

Her cancer appeared as a small nodule in the right breast following a trauma, and it grew but slowly. Her "healer" assured her that it could and would positively be cured and she trusted him. In six months it was much larger and painful, and she was assigned to another "healer" with the further assurance that it still surely would be cured. She faithfully adhered, with full confidence, to the principles laid down and another year went by.

The entire breast was now involved; there was sloughing, and frequent hemorrhage; axillary gland metastasis; fixation of the tumor, and well-marked cachexia.

A new "healer" was engaged and advised that a surgeon remove the visible evidences of "error" and all would still be well. The patient was quite willing to be guided, and still of good hope and cheer, but on asking what chances she would have to survive a radical operation, she was told that they were unfavorable and the case not a suitable one for operation. Upon her insistence, however, that it be done, a Halsted operation was performed, the entire breast removed, the axilla and chest wall thoroughly cleaned of muscles and lymphatics, and the wound healing almost entirely by first intention, she left the hospital in three weeks.

Although the "Christian science" treatment was assiduously continued to prevent a recurrence the latter took place in three months on both sides of the scar, below the axilla, and above the clavicle.

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She was X-rayed twice a week, and for three or four weeks the progress of the induration at its periphery seemed to be retarded and pain was diminished, but in a couple of months the ray treatments seemed to aggravate all her symptoms.

The Alexander fluid was then given in 5 to 30 minim daily doses to the point of saturation and it likewise afforded almost complete relief from pain and retarded the rapidity of growth during a period of six weeks.

When this failed the injection of trypsin was used as suggested by the makers in accordance with the views of Dr. Beard, the originator. It was given in increasing doses, from 10 minims to one ampoule daily, preceded by a little 2 per cent. solution of beta-eucaine. Pancreatic lotion was applied to the ulcerating surfaces, and pencreatic extract given freely by the mouth. Only slight amelioration followed. No amylopsin was used.

Soon ¼ to 1-3 grain hypodermic injections of morphia were needed twice a day to deprive the remaining few weeks of their torment. The sufferer never lost faith in her "healer" or her teachings to the end, but at the same time was quick to ask for her injections, notwithstanding their material nature, whenever the pains increased.

A case of epithelioma of the tongue, two months duration, without visible metastasis, operated radically without delay, had a still shorter lease of life.

A gentleman, aged fifty-five, of good habits and only a moderate smoker, had suffered since childhood from psoriasis, as had his father before him, indicating an epithelial dyscrasia.

The psoriasis disappeared under chrysarobin applications during the year 1905. In February, 1906, a routh tooth induced a small ulcer on the left side of the tongue about one inch from the tip. When it had persisted for about six weeks he sought treatment, and a section of the indurated ulcer was immediately taken and examined in the laboratory with positive findings of squamous-celled epithelioma. He consented to radical operation and the left half of the entire tongue from tip to base was excised through a Langenbeck incision, the floor of the mouth was dissected out as well as the upper cervical lymphatics. Anæsthesia was easily and perfectly maintained by means of the oxygen and chloroform vapor through

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a rubber catheter introduced into the pharynx through the nose, leaving the field of operation entirely clear.

Recovery was rapid and uneventful, with the exception of some difficulty in securing good union between the lower-jaw fragments, but in four months a lump appeared about two inches above the clavicle on the affected side. Removal was advised and refused until a month later, when the lump became the size of a small hen's-egg and very painful. On being removed it presented all the appearances of a cyst, smooth walls, brownish, flocculent fluid contents, no knotty induration, but the microscope showed squamous epithelial cells arranged in whorls. Death occurred in two and a half months (about nine months after the appearance of the initial ulcer and about seven months after the removal of the tongue and associated lymphatics) disappointing the hopes of cure which the early and thorough treatment seemed to justify.

A very unusual course of destruction was taken by a mammary carcinoma in a woman aged forty-five, beginning in the left breast, metastasis extending to the other, and then by permeation inward the anterior mediastinum and pleural cavities. At the end of two years the lower two-thirds of the sternum had disappeared, together with the costal cartilages of the articulating ribs, leaving an elliptical cavity five inches in extent longitudinally, and eight inches laterally, and about four inches deep. The lungs and pericardium were freely exposed, covered only with sloughing granulations, the pulsations of the heart and the respiratory movements of the lungs in plain view. This woman suffered mainly with attacks of dyspnoea and cyanosis which compelled her at all times to remain in the sitting position, but in spite of this deplorable condition she survived another half year. The treatment given by her family physician was confined to homœopathic remedies and the application of dilute antiseptics, principally formalin.

In contrast to these foregoing unhappy instances are three examples of very different results occurring in the following, forcefully illustrating the difficulties attendant on prognoses in malignant growths:

An epithelioma of the lower eyelid occurring in an aged man whose skin had always shown a marked tendency to break down stubbornly refused to yield to any form of local treatment, until

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removal through a clean V-shaped incision was performed, when primary union was secured; and in seven years there has been no recurrence.

A colored woman, forty years old, the mother of four children, began to have uterine hæmorrhages. On examination the cervix was found to be eroded, indurated and nodular, the fundus enlarged and adherent to the abdominal wall just above the symphysis pubis. She refused operation and was given an unfavorable prognosis. The induration in the abdominal wall increased in size to that of an orange, the skin became puckered and firmly fixed. Shot-like infiltration extended throughout the surrounding skin of the lower abdomen. Ulceration began in the centre of the indurated mass directly above the fundus, and the discharge had the characteristic foul odor of cancer, as did also the purulent bloody vaginal discharge. The pulse rate rose to 120, cachexia developed and the woman became bedridden. For three months no other treatment than cleansing douches, antiseptic dressings, and prescribing of Arsenicum, Silicea, and Calcarea phos. was given. At the end of that time retrogressive changes began in the growth, the general health began to improve and within another six months all trace of active disease disappeared, leaving the puckered cicatrices, the induration and fixation of the uterus. In five years there has been no sign of recurrence, and the general health is now normal in all respects.

A mammary carcinoma of nearly a year's duration, involving nearly one-half of the left breast in a woman aged fifty, had reached the stage of ulceration. It was firmly bound to the skin above and to the pectoral fascia beneath. Cachexia had already begun and was typical. The patient had a horror of the knife and refused operation. She was given Conium, Silicea, and Arsenicum. The growth slowly diminished within the ensuing year, the ulceration underwent cicatrization, and the general health improved, and seven years later there had been no recurrence.

In all of these cases there was a complete absence of family history of malignancy. Two of them exhibited a personal history of susceptibility of the epithelial tissues to disease, one, apparently the stronger, succumbed; the other, older and more infirm, recovered, although his operation was relatively less radical and much later performed.

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The woman to whom was given the benefit of modern views, radical operation, radio-therapy, Alexander injection treatment, and the pancreatic or trypsin treatment (not to mention a thorough course of Christian science) died, in spite of her strong faith and indomitable will.

The one with the single mammary cancer was neurotic, full of anxiety, and not at all vigorous in mind or body, recovered while taking mere attenuated remedies.

Not very helpful toward reaching conclusions, is it?

The pancreatic treatment of cancer is based on the theory that the albumins of the cancer cell differ in their chemistry from those of normal tissues, and are rapidly destroyed or digested by coming in contact with the trypsin ferment extracted from the pancreatic juice.

Many cures and many failures have been reported, the latter ascribed by the trypsin advocates to the use of inert preparations, or the failure to supplement with amylopsin.

The parasitic theory of the origin of cancer has not been proved, and could hardly be adopted until the conditions laid down to Koch have been fulfilled. These are:

1. The micro-organism must be present in all cases of the disease.

2. It must be capable of being cultivated apart from the animal.

3. It must reproduce the disease when inoculated into a healthy animal.

To the present time no organism has been found which will satisfy even one of these conditions.

Another theory advanced is, that the degenerative period of life, when the sexual functions decline, leaving an amount of that dynamic element called physiological energy at a loss for proper expression, it becomes misdirected and animates the susceptible and often irritated epithelial tissues, causing cytolytic changes closely resembling the nuclear changes seen in normal reproductive cells. These have been observed in malignant tumors but not in benign.

Investigators of the etiology of cancer seemed to have ranged themselves with one of two factions; the one believing in a microparasite, bacterium or protozoon; the other believing the disease to be due to some altered condition of the cell, biological or chemical, independent of parasites.

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In our present state of knowledge, the surest hope of cure is undoubtedly the early and thorough removal of the affected parts, together with all their associated lymphatics, and carefully avoiding dissemination of the cells during operation.

As to the cause, or causes of cancer, the position for the non-expert to assume is probably well suggested by the lines from the speech of Empedocles on Etna:

"The Gods laugh in their sleeve
To watch man doubt and fear,
Who knows not what to believe
Since he sees nothing clear,
And dares stamp nothing false,
Where he finds nothing sure."

DISCUSSION.

DR. ANNA C. CLARKE: I have been very much interested in this paper. It is a question that comes very near home to me. Recently I have treated a number of cases of cancer that have not proved fatal. I believe that it can be cured by suitable measures. Last winter I had a patient, a very competent nurse, who came up to Scranton to help out in the typhoid epidemic. At this time she complained of sciatica; she gave no family history of cancer, but only complained of a laceration which her physician said did not need repair. Upon making an examination I found the whole pelvis involved by the disease and sent her to Philadelphia for operation.

Upon opening the abdomen the growth was found to be irremovable, and the patient died a short time after, having been treated in the meantime by injections of trypsin, amylopsin, etc. I want to say that all cases of lacerated cervix should be repaired. When you do have trouble it is best to operate. Again I believe we might better remove mammary glands that have become involved than to leave some and let them go on to cancerous developments. In one case that we removed a section and examined microscopically, it proved it to be cancerous. Another case was operated by Doctor Roberts, of New York, but already involvement had gone on into the interior of the chest.

DR. M. M. FLEAGLE: I think the farther we get away from the old Hahnemannian idea of disease the worse we get. There is one

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thing certain to my mind, and that is that most cancers are the result of traumatism. The question natrually arises, why does not everyone get cancer? You must have a ground work to build on, and that is nothing more or less than coming back to Hahnemann's idea of disease. The removal of the cause of disease is an impossibility. Predisposition is nothing more or less than a lowering of the vitality, and we may have it of the heart, lungs or any organ of the body. If we recognize this we can take the necessary steps. If we know that a woman has an injury to the breast, watch it, because that woman may be predisposed to cancer. I would say further, in regard to this traumatic theory of the cause of cancer, that we have instances of lacerated cervix as the cause of cancer of the uterus; cancer of the rectum, due to the traumatism of constipation or indigestible substances in the diet. I would say, therefore, that after all, if we look to the predisposition and remember that traumatism is the great one, we will come nearer to the solution.

DR. J. H. MCCLELLAND: I would only like to add that we will all try to find out not only a cause for cancer, but, of course, still more, a cure for it. We always try anything that promises a cure because the hope of being cured in any case is a forlorn one.

We have all tried the various remedies, homœopathic and otherwise. We have tried the X-ray thoroughly and believe that in a variety of cases we have received benefit from its use; and one reason for this is that treatment by it is on correct lines. We know from repeated reports that the X-ray has developed epithelioma where there was no evidence of it beforehand, and we know from repeated reports that epithelioma has been cured by it. We have found here in the hospital and in my own private practice that after the growth has been removed the X-ray has deterred recurrence; but, we are still trying it. The injection of trypsin has been a great hope to some. I have had direct communication with Dr. Beard, but I must say that my experience has not justified his expectations. What we must do is to take cases early and apply such means as the X-ray to prevent recurrence or to attack secondary growths. As to the causes, we know that there must be a predisposing and immediate one. Predisposing causes may be that there is an irritation and then a traumatism or a deposit of vitiated cells

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and that is the immediate cause. Up to the present time we can go no further in the matter.

DR. C. D. SEIP: A few years ago I found in the hospital a case that was unmistakably cancer. We made microscopical tests before and after the operation, which proved our diagnosis. We did not use the X-ray or any medicines. It is now two years since we amputated the breast and up to this time there is not the least evidence of recurrence. At one time we thought of using radium, but did not do so as the patient was getting along very well without it. This is the only case that has lasted for two years without treatment. I would like to repeat that numbers of cases have died in this time. The case mentioned was the only successful one. Some cases will run six months or a year, but I believe the majority are cases of uterine cancer. I am glad to know that X-ray has done some good work in this institution. At one time we thought that when cancer of the mammary gland recurred the case was hopeless, but now these cases are treated with the X-ray and the chances of recovery are better than formerly.

ACUTE INFECTIVE OR SUPPURATIVE OSTEOMYELITIS.

JAMES H. THOMPSON, M. D., PITTSBURG.

My purpose in presenting this subject to you today is to emphasize the importance for an early diagnosis in "Acute Infective or Suppurative Osteomyelitis."

This disease occurs most often in young persons and may appear in a single bone, or in several simultaneously. It is a disease which almost invariably begins in the shaft and may involve the adjacent joints secondarily. It is very rare after complete ossification of the epiphysis. When it occurs in adults, it is usually the result of the awakening into activity of a previously existing osteomyelitic focus. The tibia and femur are more often the seat of the disease than any other bones of the extremities. Next in order of involvement are the humerus, radius, fibula, ulna, and pelvis. The number of cases in the different years of early life gradually rises to the tenth year, and is highest at the seventeenth year. The greater

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number of cases occur between the ages of ten and seventeen years. After seventeen years, the number rapidly decreases, and after twenty years, the number of cases is few. (Trendel.)

The organism most frequently concerned is the staphylococcus pyogenes aureus. There are undoubtedly cases of "Acute Infective or Suppurative Osteomyelitis," which are due to other organisms. To the latter class belong those which are caused by the streptococcus pyogenes, the typhoid bacillus, and the pneumococcus. It is almost impossible clinically to distinguish an osteomyelitis due to these three organisms from that caused by the staphylococcus pyogenes aureus.

Osteomyelitis is the most common form of inflammation in bones. Slight injuries may produce inflammation of bone which ends by resolution, leaving the bone layers unchanged. In the severe form, and particularly in chronic inflammation, destruction of bone takes place. If death of bone occurs in mass, it is called necrosis; if it is molecular, it is called caries. Before the days of antiseptic surgery, amputation, compound fractures, and many cases of open wounds connected with bones, were followed by septic osteomyelitis. Fortunately these cases are now comparatively rare.

The diagnosis of the ordinary form of Acute Infective or Suppurative Osteomyelitis is, as a rule, not difficult, although the most serious errors in diagnosis are quite common. A young adult is seized with intense pain in the thigh, and in a very high fever is compelled to lie in bed. A careless practitioner may diagnose his case as rheumatism, forgetting that acute rheumatism attacks the joints, and not the shaft of long bones, and that it is seldom confined to a single joint. Another case may show marked redness of the skin, which of itself is sufficient to lead some physicians to a diagnosis of erysipelas. It may begin suddenly with swelling over the affected bone, delirium, high fever, leukocytosis, rapid pulse, and other signs for severe septic intoxication, death occurring in a few days. With a high fever we do not always have chills, there is great pain of a gnawing or boring character, located ordinarily near the end of a long bone, and inability to move the limb or muscles, are the usual symptoms. The attacks come on more frequently at night, after exposure to cold. Swelling of the soft parts and redness of the skin are visible, quickly followed by fluctuation and pus

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formation. The pus readily separates the periosteum from the shaft for a greater or less distance; in fact, may do so from end to end around the complete shaft. The temperature continues high and the pain excessive, until the tension is relieved. Although this process may have been short, yet probing the surface of the bone reveals dead tissue. As has just been stated, this condition comes in more frequently near the end of the bone, consequently the neighboring joints are involved. At times, though not frequently, the pyogenic organisms are carried from one end of the bone to the other, without necessarily involving the shaft. Thus we have two distinct initial areas of infection.

It has been clearly shown that these cases of acute septic arthritis in infants and young children are the results of a rupture into the joint, of an osteomyelitic focus situated on the shaft side of the epiphyseal cartilage. To this form of the disease the name epiphysitis has been given in England.

The ordinary clinical form of "Acute Infective or Suppurative Osteomyelitis" may arise as a complication of compound fractures, of amputations or operations on bones, or it may follow a slight trauma or exposure to cold or wet, or develop in the course of an infectious disease, like pneumonia, typhoid, scarlatina, variola, etc. The temperature curve resembles greatly that of typhoid, being of a continuous type. The limb soon becomes swollen, tender and indurated. The skin glistens, is red, and feels hot. If no surgical relief is given, one of two conditions result:

First. A septicæmia develops, with high fever of a continuous type, rapid pulse, dry, coated tongue, marked leukocytosis, delirium or stupor, sweats, and diarrhea.

Second. The pus perforates the cortical portion of the shaft and the periosteum and appears beneath the skin, as an abcess, with distinct fluctuations.

Prognosis in this condition of bone affections should be more guarded than that of the non-infective. Death from septicæmia may take place within two or three days from the outset of the disease. When superficial to the bone, it is less dangerous than when central, as pus more rapidly reaches the surface and is more quickly evacuated.

With an early diagnosis and energetic surgical treatment, com-

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plete restoration can usually be brought about. When marked destructive changes have occurred, as in the neglected cases, amputation is as much as can be expected, and in the most cases even amputation may not save the life of the patient.

The treatment, however, has much to do with the prognosis. This is only effected by operation. The sooner the disease area is cut down upon and a free exit to the imprisoned pus created, the surer the recovery and the less likelihood of general septic infection. It is particularly important that no palliative measures should be undertaken. Herein lies great responsibility upon the attending physician. Hesitation, delay, simply means bone destruction, constitutional infection, and a probable death. It is better, even though no focus of bone disease be discovered beneath the periosteum, to trephine the bone in order to be absolutely sure of the perfect liberation of septic matter. This should be followed with irrigation by the sublimate or oxychlorine solution for the destruction of the staphylococci. If it be ascertained that the medulla is involved, it is good surgery to trephine at two different levels and scrape out the intervening infected tissue.

DIFFERENTIAL DIAGNOSIS OF ACUTE INFECTIVE OR SUPPURATIVE OSTEOMYELITIS.

The first clinical type of acute osteomyelitis described above may at first sight resemble a case of typhoid. The fever is high, and of a continuous type, and there is stupor and delirium in both. In acute osteomyelitis, however, there is a high degree of leukocytosis, and absence of the Widal test, unless the patient has had a recent typhoid. In addition, the local evidence of inflammation can usually be found by careful search.

Epiphyseal separation is quite common in the case of acute osteomyelitis close to a joint, and the diagnosis can often be made from the resultant deformity and the use of the X-Ray. In sub-acute cases, it is impossible before operation to make a differentiation from tuberculosis of the joint.

Tuberculosis of Bone. In the acute type of suppurative osteomyelitis, there should be no difficulty in making a differentiation from tuberculosis. The pain, leukocytosis, local swelling and

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tenderness, high fever, etc., are all characteristic of an acute osteomyelitis. There are certain sub-acute cases of osteomyelitis which may resemble a tuberculosis. Tuberculosis affects the shaft close to the epiphysis or the latter itself, while it is rare in the shaft of the long bones. Acute osteomyelitis is most frequently a disease of the medulla of the shaft and is rarely situated close to the epiphyses. The history of pain, rise of temperature, and the local signs, such as tenderness on pressure, swelling, etc., are all more marked in an acute infective osteomyelitis. An X-Ray will show a greater thickening of the bone, due to morlucum formation in osteomyelitis. If a sinus exists, the granulation tissue will be caseous and flabby in tuberculosis, and if examined microscopically, will show giant cells and tubercles.

I would, therefore, particularly urge upon all physicians the necessity for the exercise of the utmost care and skill in the examination of all patients suffering from the above symptoms, no matter how trivial they may appear.

APPENDICOSTOMY; ITS INDICATIONS AND TECHNIQUE.

GUSTAVE A. VAN LENNEP, M. D, PHILADELPHIA.

The operation of appendicostomy was devised by Weir in 1902, as a substitute for cecostomy, in the treatment of certain affections of the large intestine. Its use has since been materially extended, until now it is being employed for a large number of conditions, and has even been suggested as a cure for epilepsy. The chief field of the operation is in the treatment of those cases of amœbic dysentery and mucomembranous colitis, that have failed to respond to the ordinary methods of treatment.

The opening of the appendix allows of the introduction of a catheter into the lumen of the cæcum, through which medicated fluids can be brought into contact with the mucous membrane of the entire colon, sigmoid and rectum. The improvement brought about by this treatment is rapid and positive, and with the least discomfort to the patient, as the fistula does not leak to any appreciable de-

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gree, and can be easily and safely closed whenever the reasons for its presence have ceased to exist.

The operation is also of value in the treatment of ulcerative colitis, whether syphilitic or tubercular, and also for chronic constipation, although we would hesitate to use it for the latter. Recently Keetley has used the appendix, as an artificial anus, in a case of inoperable malignant obstruction of the transverse colon, all fecal matter passing out through the appendix for three months. The same surgeon recommends appendicostomy subsequent to operations for intestinal obstruction and resection, to drain the gut, and prevent post-operative distention. Maunsell used the appendix to fix and drain the cæcum, in a case of volvulus of the cæcum and ascending colon, in a woman aged seventy. Recurrence of the volvulus was thereby prevented, and later, the fistula was closed. Ewart has made the rather startling suggestion that appendicostomy be performed in certain complicated cases of typhoid fever to allow the application of medicated fluids directly to the ulcerated ileum. It is claimed by some English surgeons that the lumen of the appendix can be dilated sufficiently to allow of the passage of a suitable speculum, through which the ileo-cæcal valve can be seen, and a catheter passed through it into the lower ileum. Whether this is true or not remains to be proved, suffice it to say that the passage of any instrument into the ulcerated and weakened ileum would be attended with great danger of perforation with its inevitable results.

The conditions for which appendicostomy may be performed are: 1st Mucous colitis; 2d. Amœbic colitis; 3d. Syphilitic ulceration of the colon; 4th. Tubercular ulceration of the colon; 5th. Multiple papillomata; 6th. Chronic constipation; 7th. To fix and drain an ileo-cæcal intussusception; 8th. To drain and prevent distention subsequent to operations for intestinal obstruction, or when intestinal resection has been performed; 9th. To prevent recurrent or of volvulus of the cæcum; 10th. To apply local treatment in enteric fever as suggested by W. Ewart; 11th. As an artificial anus in malignant obstruction distal to cæcum; 12th. As a substitute for rectal feeding; 13th. As a substitute for gastrostomy or jejunostomy in very feeble and emaciated patients.

In his original operation Weis used and recommended the following technique: Open the abdomen as in appendectomy, deliver the

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appendix into the wound, and fasten it to the skin at the lower angle. Close the rest of the wound, open the appendix to see if it is patulous, and tie a ligature around it to prevent leakage. The temporary ligature is removed in two days and a catheter is introduced into the cæcum. A few days lated irrigations are commenced. This technique is simple, but is open to objections because the greater part of the appendix is left in the abdomen, and its tip only is attached to the skin. It acts then as a suspensory to the caput coli, and there is the possibility of the small intestine worming itself around it, thus causing acute flexion and possible fatal obstruction. Again, the insecure attachment to the skin might give way, and the open appendix be drawn into the peritoneal cavity, or leak into it. Lastly, a second operation is necessary for its removal, in order to avoid a possible future appendicitis. The technique was, therefore, soon altered by Meyer, Dawbarn, Tuttle and others.

Tuttle lays some stress on the importance of previously mapping out the position of the caput coli by careful examination, even distending the large intestine with gas, if necessary, so that the incision may be as small as possible, and most advantageously placed to avoid undue traction on the appendix. He prefers the gridiron incision, large enough to admit two fingers. The artery of the mesoappendix is tied and the mesentery is stripped from the appendix to its base. Fasten the cæcum to the parietal peritoneum at the lower angle of the wound by three sutures, one on either side, and one above the base of the appendix, being careful in the introduction of the side sutures not to include the lesser appendicular artery. Close the wound, and fasten the appendix to the skin by a suture on either side. Wrap the protruding appendix in gutta percha tissue and apply the dressings. At the end of two days the organ is usually found gangrenous at its tip, and should be cut away, about one-fourth to three-eighths of an inch from the skin. Follow the aperture with a probe, and dilate it if necessary with some suitable instrument, then introduce a soft rubber catheter, and tie a ligature around the stump of the appendix and catheter, close to the skin. Irrigations can be safely begun on the third or fourth day, using at first warm saline solution until the bowels have been freely opened.

Gant prefers to open the appendix before closing the abdominal wound to see if it is patulous. If the appendix is strictured, or

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otherwise unsuitable, it is removed, and cæcostomy performed after the method of Bolton and Gibson. Otherwise the cæcum is sutured to the abdominal wall, the appendix is ligated and cauterized and anchored to the skin. About the fourth day the portion of the appendix distal to the ligature sloughs off, and irrigations are begun immediately. Bennett uses an oblique incision, stitches the base of the appendix to the parietal peritoneum by a suture passed through the mesoappendix. The excess of wound is closed. Two safety pins passed through the muscular and peritoneal coats of the appendix, just beyond the skin edge, anchor it in position. Two days later it is amputated. Willy Meyer advises fastening the cæcum to the upper angle of the wound, and letting the appendix come out obliquely through the layers of the abdominal wall to the lower angle, claiming that there is less leakage by this method, than when the appendix comes directly out to the skin.

The simplest technique should be adopted, the essentials being: 1st. Small gridiron incision; 2d. Anchorage of the cæcum to the abdominal wall; 3d. Making certain that the lumen of the appendix is patent; 4th. Leaving just enough of astump to reach from the cæcum to the margin of the skin and no more; 5th. Suture of the fistula to the skin. It is surprising how easily a catheter can be passed through the lumen of the appendix, and how readily the organ adapts itself to taking a large instrument. Keetley found no difficulty in dilating a rather small appendix, until it accommodated a small rectal tube.

Of the solutions that have been used for irrigation the following will be found to be of value: In catarrhal and ulcerative conditions use nitrate of silver, 1 to 5000; ichthyol, ½ to 1 per cent; argyrol, 5 to 25 per cent.; hydrogen peroxide, 10 to 20 per cent.; aqueous fluid extract of krameria, 10 per cent.; bismuth and starch water (one dram to one ounce). In amœbic colitis solutions of quinine have a great reputation, also sulphate of copper, 1 to 10.000, as recommended by Moulden, may be of use. Tuttle has found a physiological saline solution at a temperature of 65 degrees to 75 degrees F. very effective.

To the seventy-seven published cases of appendicostomy collected by Tuttle we desire to add the following:

Mrs. K., 30 years, seen in consultation with Dr. M. W. Sloan,

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September, 1906. The patient gave a history of chronic diarrhœa of over three years' standing. She had been under the care of several other medical men but with no relief. The movements were liquid, contained mucus, and were from four to twelve a day. Doctor Sloan had at various times examined the rectum and mucous membrane of the sigmoid through a proctoscope, and found some ulceration. Local treatment was of no avail. There was also present a short, blind external fistula and intense pruritus ani. The patient had consented to any operation that held out a reasonable hope of relief. When I examined her there was tenderness to pressure over the entire descending colon, but none over the cæcum, ascending, or transverse colons, or McBurney's point. There was no evidence of any thickening or tumefaction. Colostomy was considered, but was dismissed in favor of the simpler cæcostomy or appendicostomy. The patient was admitted to the West Philadelphia Homœopathic Hospital on October 1st, 1906, and the following operation performed:

A small oblique incision was made and the abdominal contents palpated. The normal appearing appendix was brought up into the wound and fastened to the skin at the lower angle of the incision. The abdominal wound was then closed, leaving about one inch of the appendix protruding. Five days later this was cut away with scissors, one-quarter of an inch from the skin, the opening followed with a probe, and a No. 16 French soft rubber catheter readily passed into the cæcum. No anæsthetic of any kind was used, there was no pain, the patient not knowing that the appendix had been opened until told so. The following day irrigations were begun, and kept up thereafter daily. From a pint to a quart and a half of fluid was used, requiring from half to three-quarters of an hour for it to pass down to the rectum. The solutions used were physiological saline, glycothymoline, 1 to 3, and argyrol, 2 per cent to 5 per cent. It was found that the saline solution gave as satisfactory results as any.

The method of irrigation was as follows: Every morning a plain enema was given and the rectum cleaned out. The catheter was then introduced into the cæcum and the solution slowly injected. If discomfort was complained of the flow of water was discontinued for a few minutes, and then started again very slowly. At

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first a rectal tube was introduced to give exit to the washing from the colon, but as it produced pain its use was discontinued, and it was found that the patient could easily expel the fluid as quickly as it came down. The irrigations were carried out under the personal supervision of Doctor Hyzer, to whom I am indebted for his faithful care of the patient as long as she remained in the hospital.

Improvement was noted from the very first, and continued steadily until the bowel movements were regular, formed and free from mucus. All tenderness disappeared, and the patient put on weight and considered herself cured. In five weeks' time the irrigation were discontinued, and she was put on a liberal diet to "try her out," as it were. She continued in good health, the rectal fistula healed and the pruritus disappeared. The bowels moved once daily, and the stools remained free from mucus. Examination of the rectum showed the ulcerations healed, and the mucous membrane normal in color. The patient remained in the hospital for two months longer, and, as she kept well, and was anxious to be rid of the fistula, it was considered wise to close it. There was but little leakage from it, only brownish colored mucus, and occasionally an escape of gas.

On the 12th of January, 1907, after proper disinfection of the fistula, cauterization of the exposed mucous membrane and tight suture of the same over a plug of iodoform gauze, the abdomen was opened through the old scar and the remaining portion of the appendix amputated. It is of interest to note that beyond the point of adhesion between the skin and the appendix the remainder of the tube was free from any attachment to the abdominal layers, and there were no adhesions between the cæcum and the parietal peritoneum. The wound was closed, and barring a superficial infection (from the exposed mucous membrane), healed satisfactorily.

The subsequent history of the case is as follows: The patient left the hospital in January, 1907; she returned to her housekeeping duties and remained perfectly well for a period of six months. She then began to complain of the old soreness in the left side, and shortly afterward the diarrhœa reappeared. A communication from Doctor Sloan, received recently, says she is having some two to four bowel movements every morning, containing some mucus.

It would seem that we erred in closing the fistula so soon in this case, yet the patient was apparently cured and remained well a

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reasonable length of time before we did so. There can be no hard and fast rule as to the proper time to close the fistula. Every case must be judged on its own merits. The consensus of opinion seems to be that in mucous colitis it is wise to wait until the bowel movements have become regular and have remained free from mucus for several weeks. Our case remained well six weeks without any irrigations before we amputated the appendix. In cases of amœbic colitic the fistula should not be closed for from six to nine months, and if the patient returns to the tropics it should not be closed at all.

To close the fistula it is not always necessary to open the abdomen and amputate the appendix, although this should be done whenever any considerable portion of the organ remains. Tight healing will follow the plunging of the red hot point of the Paquelin cautery into the mouth of the fistula (Weir); or the use of nitric acid on the mucous membrane (Tuttle); or the mucous membrane can be dissected away with a tenotone and a pair of thumb forceps, leaving a musculo-peritoneal tube which heals solid in a few days. (Maunsell.)

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REPORT OF THE

SECTION OF SANITARY SCIENCE.

The Opsonic and Allied Theories in Immunity, by F. B. Quackenbush, M. D.

The Reading, Pa., Sewage Disposal Plant, by H. F. Schantz, M. D.

THE OPSONIC AND ALLIED THEORIES IN IMMUNITY.

F. B. QUACKENBUSH, M. D., PHILADELPHIA.

In order to keep within the field of Hygiene and, if possible, within my allotted time, it will be my aim to limit this paper to a brief resume of the various theories advanced in explanation of the phenomena concerned in immunity, including the role played by the opsonins.

A review of the literature devoted to this subject can not fail to impress the reader with the magnitude of the time and labor expended in research and the conflicting opinions resulting therefrom.

Eminent investigators seem to have massed under the standard of the promulgator of one or another theory, there to tenaciously cling to and fight for that particular school of belief. The debate, at times, appeared to be tinctured with more personal acrimony than broad-minded scientific effort to get at the true facts, more of an effort to sustain a theory than to establish a scientific truth. The researches have led into a vast maze of conflicting hypotheses and discordant facts which, to the average student, have been most confusing. At the present time, while there are many points remaining unsolved, enough has been accepted and quite definitely established, to show that many of the differences were more apparent than real.

Defining immunity in the simplest terms as "The power possessed

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by an organism to resists disease," let us recall that it may be either natural or acquired, and of the latter there are two recognized types, viz., active and passive; active when acquired by reason of having survived an attack of an infectious disease, (as variola, rubeola, pertussis), by the introduction of bacterial toxins or vaccines, or of bacteria which have either been killed by heat or lessened in virulence through certain culture methods; passive when produced by introduction of serum of an animal which has attained an active acquired immunity.

Amongst the earlier, but now discarded, theories relative to immunity was the "retention theory" of Wenrich and Chauveau, who claimed that the invading micro-organisms liberated certain substances prejudicial or inhibitory to their growth. Pasteur took a directly opposite view with his "exhaustion theory," in which he claimed that the bacteria used up some molecular substance necessary to their life and were, in consequence, unable to multiply. Both of these failed to explain natural immunity and did not long withstand the light of subsequent investigations. It was during his study of this subject that Pasteur ventured the prediction that the day would come when all infectious diseases would be treated with bacterial vaccines, an assertion which has long survived the exhaustion theory, for, while the latter has succumbed, there now exists a growing wave of sentiment amongst certain investigators in favor of it and great activity is being exhibited in the effort to produce efficient vaccines.

The first really important observations, those which have withstood the test and form a part of the accepted facts of the present time, were brought out by Metchnikoff in 1884, in his theory of phagocytosis. Metchinkoff and his confreres demonstrated the presence of enzymes in certain amœba and actinozoa which they termed amœbodiastase and actinodiastase, respectively, and to them, in part, attributed the nutritive processes carried on by the lower order of cellular life. He advanced the idea that similar powers were possessed by certain body cells in the higher order of animal life, and eventually divided these cells into microphages, derived from the leucocytes of the blood and having the power to engulf and destroy bacteria, and macrophages from certain epithelial cells of serous cavities, lymph spaces and nodes, splenic pulp and lymphocytes

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of the blood, which accomplished the destruction of other debris, as blood corpuscles and tissue remnants. The enzymes concerned in this process were termed cytases, or specifically, microcytase and macrocytase. It was observed by Buchner and Nuttall, and advanced against the theory of phagocytosis, that similar bactericidal power was possessed by certain body juices independently of phagocytosis, which was in turn explained by Metchnikoff as being due to the substances cast into the body fluids through the disintegration, or lysis, of the phagocytes. The power of attraction between the phagocytes and the invading micro-organisms was termed chemiotaxis. If the attraction was positive, the bacteria were engulfed and destroyed, thus constituting immunity; if the attraction was only partial or entirely negative, the bacteria were more or less free to multiply within the tissues and produce their untoward effects, thus constituting varying degrees of susceptibility.

It is held that many cells of the body are governed and controlled by this chemiotactic influence; that the cell, being a highly complex molecule, had the power to repel certain substances, ingest and digest others and out of the product to obtain nutriment out of which to reconstruct the molecule.

The humoral or side chain theory, advanced by Ehrlich in 1897, has for its foundation the existence of a specific affinity between certain toxins and the body cells, such affinity Ehrlich holds to be of a chemical nature analogues to the union of the simpler inorganic compounds. In its simplest form, it deals with those organisms which secrete soluble poisons or toxins, notably, diphtheria and tetanus.

Ehrlich recognizes the cells of the body as being made up of an aggregation of extremely complex molecules, each having special functions and chemic affinities; some governing nutritive processes, some possessing affinities of proteid toxins and many others which control processes not yet clearly understood. These atom groups he has called receptors or lateral chains, each of which has its special affinity or bond of union termed the haptophore. The toxin molecule is looked upon as being made up of two atom-groups, the haptophore and the toxophore, the former having affinity only for the haptophore group of the receptor.

Explanatory of the action of toxins, it is claimed that when intro-

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duced in sufficient quantity, chemical fusion of the receptor and the haptophore of the toxin occurs, thus linking the toxophore to the cell and accomplishing its destruction. If, however, the amount of the toxin be small, insufficient to destroy, the cell is stimulated to repair, super-compensation occurs and the receptors are cast off into the blood stream.

These free receptors possess but one bond of union, the haptophore, which by uniting with the haptophore of the toxin molecule satisfies its only bond and renders it inert. These free receptors, constituting the anti-toxin, are named by Ehrlich uniceptors. In support of his conception that the union is a chemical one, Ehrlich cites as proof, that mixtures of toxin and anti-toxin can be injected into non-immunes without deleterious effect; or in other words, they can be titrated against each other like acids and bases; that union is hastened by warmth and concentrated solution. The apparent exception noted in the case of tetanus toxin and anti-toxin has been explained by Ehrlich as being due to loose union, at first easily broken up but becoming fixed and stable on standing for a short time.

When, however, it is sought to explain the action which occurs upon the introduction of bacteria which do not develop soluble toxins, we are at once beset with more bewildering problems. As previously referred to, Nuttall, as early as 1888, observed that certain bacteria were destroyed by *fresh* normal serum but not by old serum or that which had been heated to 55 degrees C. Later it was shown that animals subjected to gradually increasing doses of cholera organisms developed an immunity enabling them to withstand many times the dose which would be fatal to a non-immune; further, the serum of the immunized animal, when injected into a non-immune, conferred a similar immunity. It was subsequently demonstrated that a bacterial injection sufficient to produce death could, if mixed with a portion of immunized serum, previously heated to 55 degrees centigrade, (thereby destroying the bactericidal substance contained in normal serum), be administered to a non-immune animal without producing poisonous effects. The conclusion followed that immunity was conferred not alone through the substance residing in normal serum, now known as alexins or complements, but through the aid of another substance, present only in immune serum, and dominated the immune body or amboceptor.

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Likewise, it has been shown that the serum of an animal treated with alien blood acquires the power of dissolving, or becomes hæmolytic, for, the corpuscles of the animal which supplied the alien blood. It was established that non-immunized serum, containing alexins or complements, did not possess that property; that human serum heated to destroy the complement, did possess it, thus affording ground for the assumption that the hæmolytic action also depended upon the presence of two substances—one the complement, a constituent of normal serum and thermolabile, and the other, the immune body or amboceptor, present only in immune serum and was thermostable. It was conceived that the immune body possessed two haptophore groups, one of which united with the receptor and the other linking to the haptophore of the complement, permitting the destruction of the cell through the influence of the zymophore element. This close analogy between the phenomena of hæmolysis and bacteriolysis furnished the stepping stone to the present conceptions of the formation of the various anti-bodies concerned in immunity.

There are two other anti-bodies to which we should briefly refer before considering the opsonins, viz., the agglutinins and precipitins. The earlier observations revealed that the serum of certain animals, when mixed with the red corpuscles of another, caused the latter to gather in clumps. In his study of hæmolysis, Bordet discovered that in immune sera this property was intensified, was specific and preceded the solution of the cells. The substances concerned in this reaction were termed agglutinins. Furthermore, they were noted to be active in hæmolytic sera which had been heated to 70 degrees centigrade, a heat sufficient to destroy both complement and immune body. As in the case of hæmolysis, a similar analogy exists between the reactions of agglutinin with red corpuscles and agglutinin with certain bacteria, the latter phenomena forming the basis of the well-known Widal reaction in typhoid fever which, though not infallible, has been a great diagnostic aid. While little seems to be known relative to the exact formation of the agglutinins, except that they are probably derived from the stroma of the cells, it has been pretty clearly demonstrated that although they may, through clumping, assist in the ingestion of the bacteria by the leucocytes, they do not necessarily play any part in their digestion, each process seems to be independent of the other.

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The serum of an animal treated with that of a not closely related species acquires the property of precipitating a portion of the proteid matter of the latter. The substances through which this is accomplished are known as precipitins. They are not specific in their action and are known to exist in the normal sera of some animals.

To Denys and Leclef is due the credit of first calling attention, as early as 1895, to the presence of substances in normal serum which influenced phagocytosis by leucocytes, and for demonstrating the action of these substances to be of primary importance, in that, when absent, phagocytosis took place to only a limited extent or not at all. Wright and Douglass subsequently determined their existence in both normal and immune serum, found them to be partly thermolabile, being only partially destroyed at 60 C., and, concluding they acted upon the invading cells in such a way as to sensitize or prepare them for ingestion by the phagocytes, suggested the name opsonins (opsono, I prepare for the feast). Neufeld and Rimpau, working independently, announced conclusions in accord with those of Wright and Douglas, but suggested the name bacterio-tropic substance. Furthermore, it has been shown that there exists in normal serum similar substances having a like influence on red corpuscles, others acting on blastomycetes and still others on trypanosomes. We are at the present time fairly familiar with bacteropsonins and hemopsonins, and time and further research will probably reveal the existence of opsonins for other cells and processes.

It is also interesting to note that bacteria and corpuscles are attacked by the leucocytes in the presence of human opsonins, but in the absence of the latter, they may be activated by the addition of normal serum of certain other vertebrates, as the dog, rabbit and horse. We must also bear in mind that the presence of normal opsonins is not unexceptionally required for the phenomena of phagocytosis, it having been proven that certain spirilla, as well as some bacilli, notably B. pyocyaneus and B. subtilis, are taken up in the absence of opsonin. Also, it should be remembered, the normal opsonins act favorably with avirulent strains but not with virulent.

The opsonins present in immune sera are known as immune opsonins. While their general character and behavior is similar to the normal opsonins, they present certain characteristic differences

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in being more resistant to heat and possess greater sensitizing power, being able to act upon virulent strains against which normal opsonins are ineffective.

As to whether the normal and immune opsonins are identical, there seems to be a decided difference of opinion. Wright takes the affirmative view while Simon, who was, I believe, the pioneer American worker in this field, holds that his researches will not wholly support such a conclusion.

Of the chemistry and exact source of the opsonins, very little seems to be known. As to their mode of formation, and in a measure their action, there is, as in the Ehrlich and Metchnikoff theories, considerable dispute. It is generally recognized, however, that they are in no way related to the leucocytes—a fact seemingly at variance with Metchnikoff's theory of the bactericidal properties of serum being due to substances derived from lysis of the phagocytes. Hektoen claims their development can be readily accounted for along the lines of Ehrlich's theory, and considers them as "the product of reaction of cells of the body with certain receptors of bacteria, red corpuscles and possibly other cells for which they in turn have special affinity." Metchnikoff and his co-workers, maintained the power of immune sera to be dependent upon the presence of special substances which acted upon the phagocytes, stimulating them to take up virulent strains; some others believed the substance to act as a special fixator, converting negative into positive chemiotaxis. Wright, Douglas and others conceived them to act upon the bacteria, or other cells, used in immunization, and for which, it was claimed, they acquired specific affinity. The Wright school have so thoroughly supported this conception that, in the main, it has been accorded general acceptance.

Some observers have held the opsonins to be identical with amboceptors: others claim they are agglutinins. Hektoen recognizes them as separate and distinct bodies and, in this view, appears to have the better of the argument. He summarizes his reasons therefor as follows:

1. Normal serum may possess lytic power, but not opsonic, and vice versa.

2. Immunization may give rise to opsonic substances, but not lytic or agglutinating.

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3. Heat may destroy opsonic power, while the lytic amboceptors remain intact, and vice versa.

Again, while he recognizes them as a distinct class, he compares them to toxins and complements in so far as they are probably possessed of two distinct groups, haptophore and opsonifore, whose general behavior is similar to those of toxins and complements.

It appears to have been established that there exists in normal sera separate opsonins for various micrococci and bacilli—prominently, anthrax, influenza, diphtheria, pseudo-diphtheria, typhoid, colon, tubercle and plague bacilli, and staphylo-, strepto-, pneumo-, meningo- and gonococci.

It is quite possible, aye probable, that further researches along this line will determine opsonins for many other substances, clear up many disputed points and establish a better understanding of other nutritive processes of the body cells.

Of the practical value of the present knowledge of the opsonins, I think it too early to arrive at positive conclusions. A consideration of the therapeutic application is beyond the pale of this bureau. From a sanitary point of view, the conclusions are even more vague. It is acknowledged by all observers that increased opsonic power, the result of inoculation, is of short duration. This, to my mind, gives a rather unstable foundation for the optimisic view that all infections are to be eventually stamped out by the use of vaccines whose dosage shall be standardized, measured and administered through the guidance of the opsonic index. It may not, however, be too much to hope that researches in this field of cellular nutrition may give us such a knowledge of the physiologic chemistry and vital processes of cellular activity, that we may be able to more accurately and scientifically regulate the hygienic regime from infancy to old age, and thus contribute to a higher standard of health.

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DISCUSSION.

DR. G. HARLAN WELLS: I have been much interested in the way Dr. Quackenbush has presented this difficult and rather technical subject. As he has intimated, the subject is still in an experimental stage. At the same time there are certain practical deductions that may be drawn from the facts already discovered. The first of these is that immunity is the result of the activities of the cells of the body. The cure of infectious diseases is brought about by the elaboration of antitoxic and antibacterial substances resulting from this cellular activity. We, therefore, see the folly of attempting to cure these diseases by the administration of large doses of carbolic acid, methyline blue, sodium salicylate, etc., designed to destroy the bacteria in the blood or tissues by their antiseptic powers. It is probable that such agents interfere with the natural processes of immunity and retard rather than hasten a cure. The second practical point is that in our efforts to produce a cure we should select drugs for the purpose of stimulating the formation of these natural antitoxin and antibacterial substances. It has been proven that the toxins of certain diseases when passed through the blood of animals have the power to cause a formation of antitoxic and antibacterial products. Diphtheria and tetanus well illustrate this principle. The next question which presents itself is whether we can cause the formation of such immunizing substances by drugs. This question has not been investigated by homœopaths from a laboratory standpoint. It seems to me that we have here a great field for work and that we should endeavor to demonstrate that properly selected drugs as well as serums are capable of causing the formation of immunizing bodies in patients suffering from infectious diseases.

DR. F. B. QUACKENBUSH: I brought this subject up simply from the standpoint of sanitary science, because in the past five years there has scarcely been an old school journal which did not have reference

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to opsonins. In almost every case the English and German observers are working along the line of vaccines. It is a well known fact that the higher cells of the body may develop these protective substances. It is known that opsonins are neutralized by certain drugs; it is well known, although very little experiment has been carried on along this line, that animals and human beings can be immunized against the snake venom. In this process similar antibodies are developed. Anybody who has practiced homœopathy knows that in the snake venoms he has a very effective medicine. In the production of vaccines the germs are developed on agar or blood cultures, are centrifugalized, leaving behind millions of bacteria. Or else by passing the products of bacteria through animals they are used for injecting the resultant serum into persons suffering from the various forms of infectious diseases, using the culture of staphylocicci which have been heated for these purposes. These are administered hypodermically for the purpose of developing opsonin substances so that they will be taken up by the leucocytes of the body. Among the most important remedies of the homœopathic materia medica are the nosodes, which are, perhaps, in a way analogous to these cultures of bacteria. These have been administered by homœopaths for years with varying opinions as to the results obtained from their use. The old school is now carrying on a series of experiments, and the literature on this subject is simply overwhelming. No reference has been made as to whether nosodes, snake venoms, etc., are capable of stimulating the opsonins of the body.

THE READING, PA., SEWAGE DISPOSAL PLANT.

HENRY F. SHANTZ, M. D., READING.

Each municipality situated on a water course which is used for a water supply by other cities down stream must be interested in the proper disposal of putrescible waste.

The careless disposal of domestic sewage tends to spread disease.

The epidemics of typhoid fever at Plymouth, Butler, Scranton and other places in this State attracted the attention of the authorities

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to the pollution of the streams, and were a factor in the enactment of laws by the Legislature prohibiting the pollution of streams and creating the Department of Health.

Sanitation and sanitary regulations are and must be of interest to the physician. I do not mean that every doctor must be a sanitary engineer, but he should be interested in the efforts to so dispose of the waste materials that they are rendered non-putrescible before they are allowed to enter a stream which might be used as a water supply elsewhere.

An important matter in every community is this disposal of waste material, and the larger the community the more important the question.

The maintenance of a nuisance is illegal, and if this is a menace to the health of a whole city the responsibility is greater.

The proper disposal of garbage, trade wastes and domestic sewage are the important factors in this question of pollution of streams.

Situated as the City of Reading is along the Schuylkill River, fifty miles from the largest city in the State, the question of the disposal of sewage is important, and I desire to describe the plant recently completed to treat the sewage.

So far as the waste of the City of Reading being a menace to Philadelphia is concerned, the nine dams in the Schuylkill River which have a total fall of 81.45 feet in the fifty miles of flow act as sedimenting basins and aerating plants and render much of the suspended matter of little moment as a menace to the health of Philadelphia, but if the cities of Pottstown, Phœnixville and Norristown are permitted to turn their sewage into the river in the raw state it would seriously pollute the river whence Philadelphia secures a part of its water supply. Hence the law controlling the pollution of streams must apply to all.

Recognizing the necessity of caring for its sewage some ten or twelve years ago the City of Reading caused a house sewage system to be constructed. Thirty-four miles of street sewers were built, a pumping station was constructed and a cast iron force main was laid on the bed of the river, and through this the sewage was pumped to a disposal plant at Millmont, 6.000 feet away, on the opposite side of the river, where the double decked filter beds of the Deery system

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were located. Each deck had an area of 250x50 feet, the upper deck supported by a steel frame, resting on which were metal supports to hold the layers of slag and sand, was elevated ten feet above the lower deck, thus providing for the aeration of the sewage as it fell from the upper to the lower deck. This was a sand filtration system. For several years the plant seemed to be efficient, but as the amount of sewage increased with the new sections of the city added the load became too great for the plant and the fine fibrous material from the trade wastes along with the sludge from the domestic sewage seemed to clog the beds.

Two years ago when the contracts were let to add sixty miles of sewage to the house sewage system, the enlargement of the plant was considered, but it was found that the system did not warrant the expenditure of the additional amount of money, and, as it was not efficient, a new system was considered.

In compliance with the recommendation of Hering and Fuller, consulting engineers, Mr. O. M. Weand, a contractor of our city, offered to construct a plant of 7,000,000 gallons per 24 hours capacity and operate it for five years at an annual cost to the city of $46,000, or a total outlay of $230,000, and at the expiration of his contract turn the plant over to the city. He had hoped to have the plant in operation at this time, but owing to delay in the construction of the pipe line from the septic tank to the filter beds, which was sublet to another contractor by the city council, the plant is not in operation, and hence I must confine my statements to a description of the system without being able to submit samples of the sewage taken from the plant showing the condition of the effluent from the time it enters the pumps until discharged into the river.

I have several photographs showing construction of the plant which I will pass for your inspection.

In the Weand system, which is a septic tank, sprinkling fountain filter system, the sewage is passed through a "segregator' to remove the coarse material and fibrous trade waste, and is then pumped through the old force main to the septic tank, whence it flows to the dosing tank and is distributed to the filter beds, thence to the settling basin and out into the river. From the pumping station at the foot of 6th street to the end of the conduit at Fritz Island is about two and a half miles.

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The "segregator" is a large revolving cylinder covered with a screen of brass wire cloth of forty mesh to the linear inch, supported by another screen of half inch wire netting. The sewage as it flows from the trunk sewer is received into this "segregator.' The coarse suspended matter is removed here and by means of rotating buckets is conveyed to a centrifugal "whizzer" to be dried, and is then burned under the boilers at the pumping station. The portions of suspended matter adhering to the screen are removed by the aid of steam or hot water applied through a perforated pipe with openings at right angles to the moving screen.

The effluent from the segregator is collected in a large well, whence it is pumped through the twenty-inch cast iron force main to the septic tank. The old double decked filter beds have been removed and a concrete steel reinforced septic tank constructed. The tank is 255 feet long, 55 feet wide and 18 feet deep. Here the bacterial treatment of the sewage occurs. I take it that you are conversant with the principle of the action of the anærobic bacteria on sewage. The effluent enters the tank through twelve openings uniformly distributed across the end of the tank below the surface and flows off over a fifty foot weir at the other end of the tank into a trough which conveys it to the gravity flow pipe, which carries it to the dosing tank at the filter beds located on Fritz Island, 3,000 feet away. Along the bottom of the septic tank are four baffle walls four and one-half feet high which will impede the flow of the lower strata of the liquid and thus favor the settling of such solids as the screen has not removed. It is reasonable to expect that such a septic tank may require cleaning every four to six years, and the sludge removed, spread in furrows to dry and be burned or used as fertilizer. At the filter beds the effluent flows into the dosing tank, from which it flows into the distributing system of pipes which convey it to the sprinkling fountain.

The filter beds cover an area of one acre, of which there are two each. A four-inch concrete floor is covered with half round vitrified six inch drain pipes, and these are overlaid with a five foot layer of broken slag. This slag is secured at one of the slag beds of the Reading Iron Company, and as it is practically refuse is cheap. More than 10,000 tons have been used at the beds. The size of the slag varies

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from one to four inches. The lower layers are laid by hand to prevent clogging of the vitrified drain pipes. The edges of the slag layer are left exposed to favor aeration.

On the bottom of the beds are a series of pipes arranged in sections to distribute the effluent to the different sections of the filter beds. At intervals of fourteen feet sprinkling fountains are located on the tops of the four-inch stand pipes, which are the terminals of the distributing system. These extend a foot above the surface of the slag layer. There are 218 of these fountains on the beds.

The function of the dosing tank is to collect the effluent from the septic tank until it reaches sufficient height to give it the required head to spray it over the fourteen foot diameter of the slag layer. As the head of the dosing tank diminishes the area of distribution of the effluent gradually contracts and thus spreading the effluent over the filter bed surface, thus utilizing the whole surface.

This distributing system is divided into four sections each controlled by a valve so that any quarter of the bed may be cut off and given a rest. This cutting off portions of the bed enables them to dry out and the films of solid matter conveyed to the bed in a very fiinely suspended state or in solution will crack or peel off when the flow is again started and pass out with the effluent to be retained in the settling basin. The bacteria have rendered this solid matter non-putrescible.

The effluent. after percolating through the slag layers, is drained through the half-round vitrified pipes at the bottom of the beds and flows over the lower ends of the concrete floor of the filter bed into a central drain and thence to the settling basin, a concrete reservoir 108 feet long, 103 feet wide and 5 feet deep, where the non-putrescible flakes are deposited. This settling basin will require cleaning and removal of sediment about once a year.

From the settling basin the effluent flows through an open conduit into the Schuylkill River in a non-putrescible condition.

The advantages claimed for the system are:

1. Low cost of construction and operation.

2. Rapid rate of purification with sprinking filters as compared with sand filters. Sand filters while producing a clearer effluent are slower, more troublesome and necessarily more expensive. One

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acre of sprinkling filter bed will purify sewage that would require six to eight acres of sand filters.

3. Effluent contains less than 10 per cent. of bacteria. River water contains more normally.

One advantage in the element of cost of operation in the Reading plant is the fact that situated as we are the sewage need be pumped but once, the remaining flow being a gravity flow.

The water board in our city have installed a sand filtration plant for two of our sources of water supply and the question of the construction of another plant for the remaining supply is being agitated. In a few years we will be protected from infection from the north and will protect our neighbors on the south from danger from our waste materials.

In an article published in the September 5, 1907, issue of *Engineering News*, Mr. F. Herbert Snow. Chief Engineer of the Department of Health of Pennsylvania, refers to the Reading plant as the first plant to be erected under the new Department of Health of Pennsylvania.

Norristown has constructed a sewage system and defiantly pours the raw sewage into the river. This question will require a court decision to decide their right to continue this practice and determine the power of the State to enforce provisions of the law of pollution.

York is prohibited from using forty miles of new sewers until a disposal plant is constructed; this may be a remote possibility, for I note that the loan bill failed of ratification at a special election recently.

Philadelphia is allowed five years to adopt a sewage disposal system.

Easton, South Bethlehem and Allentown are each allowed three years.

Pittsburg must dispose of sewage and not menace towns down the river if up towns are not to menace her water supply.

New Castle has adopted plans for a disposal system.

Greenville is constructing a septic sand contact bed and sewer filter system..

Washington, in this State, is building a septic tank and sprinkling filter plant.

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During the time the Reading plant has been under construction a similar plant was being built at Columbus, Ohio.

Baltimore has adopted this system, and will build a plant in which the effluent will, after leaving the filter beds, be passed through a sand filter, as the effluent is to be discharged into a stream where oyster beds are located.

"Within a year more than 100 places in Pennsylvania will have been ordered to prepare plans for sewage treatment."

DISCUSSION.

DR. HILLS COLE: I am very glad that Dr. Schantz has brought this matter to our attention. Physicians, as a whole, pay too little attention to this department of sanitary science. As a rule, filtration beds similar to those formerly used by Reading proved to be the most perfect system of sewage disposal, the effluent from such filtration beds being the best obtainable from any system. However, the modern tendency is to use plants such as those described by Dr. Schantz. These cost much less to install, and much less to operate, and the effluent, as a rule, is sufficiently satisfactory.

Last year it was my privilege to spend a number of weeks in Great Britain, during which time I visited quite a large number of sewage disposal plants, and in nearly all of them the sprinkling filter system was replacing or had replaced the older methods.

There is one point which must be borne in mind in connection with these municipal plants for the treatment of sewage. No matter how perfect the plant may be, no matter how much it may have cost, it will not operate itself, and if its supervision is entrusted to some political appointee who knows nothing about the working of such plants, the results are sure to be such as will not be a credit to the city nor satisfactory from a public health standpoint. Here, as elsewhere, politics should be kept out of the administration of public health matters.

Then, too, we need to be sure that a plant is working satisfactorily, and for this purpose those in charge of the works should be sufficiently versed in the use of chemical apparatus to be able to make rough tests of the effluent to determine its putrescibility and its capacity for absorbing oxygen.

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REPORT OF THE

SECTION OF HOMŒOPATHIC INSTITUTES AND CLINICAL MEDICINE.

The Thoracic Visceral Crises of Locomotor Ataxia, by W. F. Baker, M. D.
Topical Cutaneous Therapy; the Indicated Local Remedy; Its Action and Method of Application, by Ralph Bernstein, M. D.
The Clinical Significance of Irregular Pulse, by G. M. Golden, M. D.
Shall We Preserve the Integrity of the Homœopathic School, by E. M. Gramm, M. D.
Pruritus Ani, by G. B. Moreland, M. D.
Meningitis, by Anna D. Varner, M. D.
The Diagnostic and Therapeutic Uses of Tuberculin, by G. H. Wells, M. D.

THE THORACIC VISCERAL CRISES OF LOCOMOTOR ATAXIA.

WILLIAM F. BAKER, A. M., M. D., PHILADELPHIA.

Clinicians in their investigations of ataxia seem to have avoided this realm of symptomatology, and rightly so because of the liability to confound these symptoms with those occurring from pathological conditions not connected with ataxia and having no relationship to it. Still there are symptoms which are manifestations of ataxia and which do affect the thoracic organs and which occur in cycles, hence the name crises.

During the last few years of dispensary practice these symptoms have been sought for and recorded out of a series of cases. The cases have been taken with no idea of classification, but with the sole purpose of studying these symptoms, and a brief resume of these investigations I wish to present to you.

Briefly we will consider:

(1) Thoracic pain.

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(2) Respiratory symptoms with hæmoptysis.
(3) Laryngeal crises.
(4) Cardiac crises with hæmoptysis.

In attempting to outline the symptoms noted above great care was exercised not to conflict them with any symptoms which might result from pathological lesions within those organs and resulting in the production of similar symptoms. Again, these investigations were strictly confined to cases presenting marked symptoms of ataxia. It has been long recognized that ataxic symptoms follow definite outline, which, briefly stated, is:

(1) Sudden onset.
(2) Sudden cessation.
(3) Definite course.
(4) Usually uninfluenced by medication.

These characteristics are so true of symptoms in ataxia that really they may be called the "symptom test" of ataxia, and having these characteristics and frequency of repetition, they may properly be called "crises."

(1) Thoracic pain. The pains of ataxia attacking the chest vary very little from the general characteristics of the pains in other parts. The patient is suddenly seized with a severe cramp-like pain in the sternal, axillary or interscapular region. This pain is of a sharp, shooting character and is often associated with an excess secretion of mucus into the bronchial tubes and attended with some dyspnœa and anxiety. The pain begins suddenly and increases in severity until it becomes almost intolerable from the sense of constriction it gives to the chest, and there takes place the condition of "air hunger," owing to this secretion of mucus within the chest. The pain continues for a while and suddenly subsides, followed usually by the free expectoration of a thin, glairy, mucoid substance and a prompt relief of the distress in the breathing. The average duration of these attacks is several days and they are very often looked upon as "bronchitis" or "colds in the chest." Some of the cases recovered in a remarkable short time of several hours. Another variety of thoracic pain in ataxia is the so-called girdle pain. While it is true that in the majority of cases these girdle sensations occur below the umbilicus, yet the symptom was observed in several of our cases, to be sure, a very low percentage. The characteristics

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are about the same as those of girdle pains in general. Many writers consider this symptom to indicate a rapid advance of the sclerosis, so that it is to be found rather late in the disease.

The pain is usually described as a tight band constricting the chest, it may be completely or unilateral or strictly confined to one spot in the chest.

In these cases the diagnosis of intercostal neuralgia has always to be kept in mind, yet the differentiating features are so marked that only the word of caution needs to be given out. The tender areas are only the seat of the pain at times, yet there may be, and usually, in the greater percentage of cases, there is a marked insensibility as far as the skin and tissues are concerned.

(2) Respiratory symptoms with hæmoptysis. Occurring with the attacks of thoracic pain we have, as was stated above, an increase in the secretion of mucus. In fact, this is true wherever we have a visceral crisis in ataxia, that is, there occurs a marked secretion in the organ which is the seat of the pain, as, for instance, in the gastric crises you have an excess of secretion and the functional disturbance of vomiting, so you have in the lungs a large quantity of mucus filling, in one case, the entire chest. As the pain subsides gradually there is developed a cough and expectoration of this mucus to such an extent as to clear up the chest. One case in particular may be here cited. It was in a female who progressed to such a point as to strongly resemble an œdema of the lungs, and in fact that diagnosis had already been made by her physicians, and a consequent prognosis afforded, when to their surprise she greeted him again the next morning prepared to go on an outing. Mention is made of this case to show how far this condition may develop and how serious it may seem.

The attack may last for several hours and the cough which follows be of a very irritating character, and prolonged efforts at cough may bring blood and expectoration.

In two cases the respiratory crisis seeemd to be of little moment, but the hæmorrhage was large, possibly 1 ounce of bright, red blood would be expectorated at the end of the act of coughing. These hæmorrhages may be considered as analagous to the hæmorrhages which occur in the skin at times, the result of sharp shooting pains in those localities, although they are very rare.

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In another case the attack resembled asthma and had been diagnosed as such. It consisted in paroxysmal attacks of dyspnœa attended with a very slight expectoration.

The physical signs in these conditions resemble those found in the conditions pathologic, which are known to present such signs, but between attacks the chest is free from physical signs.

It is certain the advanced sclerotic changes in the vessels and bronchial tubes add their share to the severity of these symptoms, but the peculiar feature is the remarkable absence of symptoms between attacks.

The symptom of cough will be considered under the heading of laryngeal symptoms. As to evidence pointing to localization in these respiratory symptoms, it must be said that it has been entirely negative. The physical examination showed the whole lung to be involved in the process, most rales being heard in all parts of the chest.

Still another form of respiratory disturbance has been noted and in this there is an absence of the pain and comparatively little distress except that occasioned by the dyspnoea present and the anxiety caused thereby.

This consisted in the occurrence of attacks of marked dyspnoea, seemingly independent of cardiac disturbance, the respiration being quickened and shortened and occurring in cycles resembling strongly the Cheyne-Stokes variety. These attacks lasted for several minutes and usually subsided, leaving the patient quite comfortable and free from symptoms. In one case which showed signs of undoubted medullary involvement, death took place in one of these crises.

There seems to be a strong inclination to classify these cases in the types of "superior tabes," that is, tabes affecting the upper regions of the cord and usually made manifest by the occurrence early of eye symptoms, such as amaurosis and general impairment of the vision. These cases have applied to opticians and oculists for relief, but the proper correction of the refraction affords no relief. Upon the examination of the disc they will be found to be early congested and later on pale and atrophic. As soon as this is discovered the cases are referred to the neurologist and the diagnosis of tabes completed. Now the usual history of these cases is one of rapid de-

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cline, death taking place in the average case in from 8 to 18 mos. There may be no ocular palsies with the possible exception of the iris and again the lower reflexes may be but slightly disturbed. The name of superior tabes is especially applicable to them.

Respiratory symptoms are common and often pronounced and as stated before, often fatal.

Especially is the error of regarding these cases as tabes, when by a careful urinary examination they could readily be diagnosed as those of interstitial change in the kidney. But again there should be no difficulty or cause for error, as the properly applied test will readily solve the difficulty. Among the first signs then are the congestions to be found in the nerve heads. These go on rapidly—interstitial atrophic conditions with resulting blindness. Many of the puzzling atrophies found in the optic nerve may be explained on the ground of locomotor ataxia.

This type of ataxia also furnishes us with the most active class of ataxias and the specially dangerous ones to life. In these cases the respiratory phenomena offer the most dangerous front. With the attacks of dyspnœa there occur the laryngeal crises with the spasm and closure of the glottis.

(3) Laryngeal crises. In these conditions the symptoms are alike referable to the vagus and the accessory nerves, with, at times, the occurrence of paralyses. In fact, both these conditions may occur together, but necessarily so they are not dependent one upon the other. The symptom complex of whooping cough corresponds as nearly to the laryngeal attacks as most any ordinary known ailment, and in one case the differential diagnosis was not apparent to the attending physician. A sensation of tickling is first felt in the throat, which results in attempt to clear the throat and finally breaks out into a loud, explosive cough. The cough is continuous until it assumes spasmodic proportions. A long, noisy inspiration is succeeded by short, quick coughs until the face is suffused and choking results. After several violent attempts a little ball of translucent mucus is expectorated. From its close similarity to pertussis, further description is not necessary, for like it, the paroxysms vary in frequency and severity. At times the paroxysm is so pronounced and so severe that the patient falls unconscious and is seized with a general convulsion closely simulating an epileptiform seizure. In

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one of our cases associated with crises in the larynx there occurred an œdema of the lungs, with consequent death, in a very few minutes.

Most patients describe the onset of the condition by a burning, stinging sensation in the larynx followed by a rapid inspiration and a sensation as though the throat were going to close up. After this there is developed stridulous or crowing respiration. A mild form of this condition is seen at times in children suffering from chorea.

As has been stated, the frequency and severity of attacks vary in the same individual. While at first they may be slight, later on in the disease they become severe. At times there is also a temporary cessation of them, so that brilliant cures from carefully selected remedies have been reported, when the very best we ought to say is that the patient is probably relieved for the time being in the course of the disease, and that these paroxysms may recur at any time and, too, with increasing severity.

Cardiac symptoms are to be made the subject of a later consideration.

TOPICAL CUTANEOUS THERAPY; THE INDICATED LOCAL REMEDY; ITS ACTION AND METHOD OF APPLICATION.

RALPH BERNSTEIN, M. D., PHILADELPHIA.

Just a year ago I had the pleasure of reading a paper before this society on "Some of the More Common Skin Diseases." At that time, and frequently since then, have I been requested to write a paper on the local treatment of dermatologic affections. I have, therefore prepared a paper for you which I have titled Topical Cutaneous Therapy; the Indicated Local Remedy; Its Action and Method of Application. In my paper to-night it is my purpose to give a general plan, which shall be of benefit in treating skin diseases locally. That is to say, a plan which will enable us to correctly treat a diseased skin on its general appearance, for diagnosis is often bewildering, and hard to make. Not that every derma-

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tologic condition can be treated without diagnosis, but that there are certain manifest conditions which are general, and which can be met in a general way. It is, therefore, my intention to give the general manifestations, which a few of the more common local remedies will relieve, and the general indications, or existing conditions, which will point out this indicated local remedy. I shall, furthermore, give the method of action of the various drugs employed, so that we may know why we are using them. I shall finally conclude with the methods of application and removal of the various substances used, which is of more than paramount importance in the proper local treatment of dermatologic affections.

Think not for one moment that I am decrying the internal method of treatment for cutaneous diseases, for that would be folly, especially from the homœopathic standpoint of view. For I must repeat again and again that it is demonstrated, day after day, in our homœopathic skin dispensaries that our patients cannot help getting well, even where they absolutely refuse to carry out directions given for topical treatment. Now I do not presume to infer that this would demonstrate that topical treatment should not be practiced when homœopathic remedies are capable of sooner or later making a cure, for such is not the purpose of my paper.

I might state here, that I have in the course of preparation a companion paper titled "Internal Cutaneous Therapy," which I shall hope to have the pleasure of reading, to some of you at least, in the near future. I might further state that it is not my intention tonight to give a long list of topical remedies, but shall limit myself to a few of those which clinical experience in the skin section of the Hahnemann Hospital Dispensary at Philadelphia, and in the skin dispensary of the West Philadelphia General Hospital, have demonstrated to be the best.

Let us begin, then, by giving a short resume of our dermatologic armamentarium, that is to say, a few of the various substances which are useful and their ingredients. Among the varieties of topical substances used I shall first mention the detergents, to which class belong the drugs which will aid us in removing crusts, scales, scabs and extraneous matter. As water is usually irritant to acutely inflamed surfaces, olive oil is to be used instead, to which is to be

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added ten to fifteen grains of salicylic acid. Why salicylic acid? Because of its well-known keratolytic properties, that is, its ability to loosen up and cause solution of the epidermis.

Soothing applications I shall consider, for one is very, very frequently called upon to allay some acute dermatose, which is playing havoc with the patient. Of all the soothing lotions, lotio calamine has indeed been a good friend to patient and doctor alike. Its composition is as follows: Pulv. calamine, pulv. zinc oxid., glycerine, of each a drachm, and lime water, four ounces. Many an erythema has succumbed to its balmy influences. Many a baby's acutely inflamed epidermis has been soothed by it, and many an aching sunburnt skin has given way to its tranquillity. Accept lotio calamine, then, as a true dermatologic friend and see what a host of grateful patients it will gain. For obvious reasons we must occasionally have recourse to a soothing ointment instead of a lotion. Then consider a combination which I call the unquentum calamine, composed of a drachm each of the following: Pulv. calamine, pulv. boric acid, pulv. zinc oxid. to an ounce of the ungt. aquæ rosæ, as a base. How cooling and soothing this combination really is its use will easily demonstrate.

Antipruritics will next concern us, the lotio calamine and unguentum calamine, which I have just mentioned, are more or less antipruritic in their action, so that they very often suffice to allay any mild itching dermatose. However, where they fail, carbolic acid or menthol will be considered as additions. The amount added to be small to begin with, not more than one per cent., and then to be gradually increased as needed. It is to be remembered that carbolic acid acts by its direct influence upon the sensory nerve endings, and, therefore, it must be increased with caution. It is often advisable and as well of benefit to drop back to small quantities after having increased to a safe limit. Menthol acts as an antipruritic by producing a different kind of sensation, that is, one of cooling; many patients prefer it to carbolic acid and vice versa.

Let us now take up the astringent class, for we will occasionally want to use an astringent, as, for example, in a subacute eczema. Among the good ones to use are bismuth subnitrate, bismuth subgallate, resorcin and salicylic acid, one-quarter to one-half drachm

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to the ounce in combination with other substances, remembering that boric acid and calamine are likewise slightly astringent in their action.

The anti-parasiticides will next claim our attention; among those which will be of service to us, in controlling the attacks of both the animal and vegetable parasites, are sodium hyposulphate (in saturated solution), sulphur, naphthol, and the ammoniated mercury; from ten to forty-eight grains to the ounce, depending upon the sensitiveness and of the skin and the age of the patient.

Stimulating applications will often be found to be of necessity, as in old, indurated eczemas, psoriasis and the like. Where they are needed, tar, the compound tincture of green soap, sulphur, naphthol, and the ammoniated mercury, will be found to be of benefit. Again it is well to take the precaution, to use this class of substance intermittently, using a soothing lotion or ointment in between.

Among the keratolytics, or that group of drugs which causes solution of the epidermis, might be mentioned, salicylic acid, liquor potassæ, and the tincture of green soap. Directly opposite to this class, we have those drugs, which tend to hasten cornification of the skin, by converting the soft epidermal cells into horn cells, and are known as keratoplastics. Among the weaker keratoplastics, Unna has classed, icthyol, thiol, and sulphur, and among the stronger, tar, resorcin and chrysarobin.

Now that I have discussed the varieties of topical applications, let me next take up a discussion of a few of the more important drug actions, which will better enable us to understand topical cutaneous therapy. Let me first consider boric acid, which is a mild sedative, and has a soothing effect upon the skin. It is a weak disinfectant and antiseptic, and slightly keratoplastic. It is useful in any acute condition, and seldom if ever aggravates or irritates any existing condition. It is a common ingredient in the majority of soothing preparations, whether in the form of powder, lotion or ointment. Glycerine, in its pure state, is decidedly hygroscopic, and when applied to the skin, it extracts water rapidly and is decidedly irritating. If, however, it is highly diluted, its action upon the skin, is like that of fats and oils and is decidedly soothing. Calamine, an impure carbonate of zinc, is a simple powder, of a brownish to pinkish

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color, decidedly soothing, and slightly astringent. Salicyclic acid, has double action in small amounts, five to ten grains to the ounce, it is astringent and soothing, and is an oft used dermatologic drug. Especially useful in acutely inflamed surfaces, for it assists in the regeneration of destroyed epithelium. In larger amounts, fifteen to twenty grains to the ounce, it is antiseptic and anti-parisitic, and keratolytic; being useful in those dermatoses which are not acutely inflammatory. Still again, in still larger amounts, fifty to eighty grains to the ounce, it is decidedly keratolytic, useful in such amounts for the removal of hardened masses, then best incorporated in collodin, so as to limit its action to the intended area. Resorcin, like salicylic acid, has a double action upon the skin. In small amounts it is keratoplastic, that is, it tends to harden the skin by favoring cornification of the epidermis. In large amounts it is keratolytic, destroying and macerating the skin. Resorcin oxidizes upon exposure to the air, and is stronger and more stimulating than sulphur, which I shall next consider.

Sulphur derives its therapeutic properties from the fact that it is converted into hydrogen sulphide when once applied upon the unbroken skin. When, however, it is applied upon raw surfaces, it is converted into sulphuric and sulphurous acid. It is well to remember that in scabies, sulphur owes value, as the remedy par excellent, to the fact that it is converted into hydrogen sulphide, and especially so when lard is used as a base, for lard seems to favor the freer eliminations of the hydrogen sulphide. Sulphur, likewise, belongs to the same class of drugs as the two preceding, withdrawing oxygen from the tissues, and favoring cornification. If used in amounts of five to ten grains to the ounce, it can be used in inflammatory conditions, without irritation. The precipitated sulphur is the form usually used, on account of its greater purity over the other forms.

Ichthyol, a very useful remedy is obtained by a process of distillation from a bituminous quartz, which is rich in the fossilized remains of fish and marine animals, and contains from ten to fifteen per cent. of sulphur. It is anti-parasitic, antiseptic, astringent, and anti-pruritus. It is of service in burns, erysipelas, eczemas, and any of the acute inflammatory dermatoses. Its odor is an objection, thiol, however, which is similar in its properties, is almost odorless.

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I shall next consider that useful, but much abused remedy, tar. In skin diseases, we may use one of three preparations, wood tar, or pix liquida; oil of juniper, or oleum cadini; and oil of birch, or oleum rusci. The most reliable of the three is pix liquida. Tar in large amounts is stimulating and irritant, whereas in small amounts it is anti-pruritic, and astringent, acting on the cutaneous capillaries. All skins will not tolerate tar, and therefore great care must be used in its use. It should always first be used in very small amounts, beginning with not more than one per cent. and very gradually increased. For its anti-pruritic effect, usually about four per cent. will be tolerated, whereas as a stimulant, in sub-acute and chronic dermatoses, from twenty per cent., to the crude tar can be used.

Tar is usually incorporated in an ointment base, as it is sparingly soluble in water. Where it is desirable to use a liquid preparation, Bulkley's liquor picis alkalinus, may be used in from one to ten per cent. strengths. The ingredients follow: Pix liquida, two drachms; Caustic potash, one drachm; Aqua, one ounce.

I shall now conclude the consideration of drug action, with a few words on ammoniated mercury, which is indeed a very useful remedy, in pustular and parasitic skin lesions. In amounts of ten to forty grains, to the ounce of ointment base, the ammoniated mercury, is useful as an antiseptic and local stimulant. In amounts of five to twenty grains to the ounce, it is of decided benefit, in small areas of suppuration, and is non-irritating. In amounts of from thirty to forty grains to the ounce, this same drug, is useful in such conditions, as psoriasis, or any other condition, where it is desirous to excite a healthy inflammatory reaction.

I shall next have a few words to say with reference, to ointment bases, of which there are many. Among them might be mentioned lard, lanoline and vaseline—cocoa butter, wax and paraffine, being added to give stiffness, and glycerine, olive oil, and oil of sweet almonds, etc., to soften them. Lard as an ointment base, is frequently used, with the addition of about five per cent. of benzoin to prevent rancidity.

It must be remembered that this form of ointment base, is often irritable to tender and sensitive skins; petrolatum and lanoline as well will frequently not be tolerated. As to the absorbability of certain ointment bases, there is indeed a marked diversity of opinion.

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Lanoline, being a fat similar to skin fat, has always enjoyed the reputation of being the most absorbable of them all; this fact, however, at present is questioned by some atuhorities. Luff, in the Monat. f. Prak. Derm., contends that vaseline preparations were the most absorbable, and lanoline the least. While Aubert, in the Jour. Cutan. Dis., contends that oils and lard penetrate the deepest, with simple application, while lanoline, was the most penetrating, when friction was used. Still again, Sutton, in the Monat. f. Prak. Derm., comes forth with the information that he considers, that neither lanoline nor vaseline are at all absorbable, seldom reaching deeper than the constricted necks of the skin follicles. Sutton, further claims, that of all the unguent bases, goose grease, is the most absorbable, penetrating far down into the very bulbs of the follicles. Olive oil, he places second on the list of absorbables, and as before mentioned, lanoline and vaseline last. Clinical experience has demonstrated to me that, of all the ointment bases, the official Ungt. Aqua Rosae, or cold cream, is easily the best, both from the standpoint of absorbability and the fact that it is absolutely non-irritating, cooling, soothing, and acceptable to the most tender skins. Cold cream owes its cooling properties chiefly to the fact that it contains nearly twenty per cent. of water, the evaporation of which gives the cooling effect. Cold cream is composed of almond oil, which gives it its power of absorbability, spermaceti, white wax and rosewater.

Let me begin the consideration of the indicated local remedy, by dividing skin diseases into two great classes; those which are specific, and those which are non-specific. The non-specific, which concern us only, at this time, I shall divide into those which are infectious, and those which are non-infectious. This will give us enough of a working rule to outline the necessary treatment for the general run of skin diseases at least. Under the class of the non-infectious I shall include such conditions as the erythemas, whether it be erythema simplex, erythema intertrigo or chafing, or erythema multiforme. The eczemas, urticaria, and pruritus, likewise belong to this class, and happily all of these conditions just named will respond to either of our old friends lotio or unguentum calamine. With or without the addition of either carbolic acid or menthol, according to the amount of itching present. Where oozing or weeping is mark-

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ed, the best results are obtained from unguent, with perhaps the addition of a half or a drachm of an astringent, when necessary, of which we would choose either the bismuth subgallate or subnitrate, the latter being the more powerful. Let the general rule be, to begin the treatment of any acute dermatose with a mild and soothing ointment, or lotion, and if in doubt, continue the same treatment, until the true picture has clearly established itself. The probabilities are that the dermatose will in many a case, long have disappeared, while one is still wondering what it might have been. Let another working rule be, wait, hurry never, nature works wonders in the acute dermatoses, and is always ready with a helping hand, if only given half a chance. Then, again, fear not the bugaboo of driving in the eruption. Unna, Duhring, Hebra and Crocker all say, there is no danger, and there is no reason why there should be.

The infectious class next demands attention; among this class I shall mention such conditions as impetigo, the trycophyton infections, seborrhœa, erysipelas, scabies, psoriasis (?), dermatitis venenata, and alopecia areata. The anti-pariticide which will be of the most use to us, in impetigo, the trycophyton infections, and any pustular skin disease, is the ammoniated mercury, ten to forty grains to the ounce of the ungt. aquæ rosæ. This same drug is of benefit in alopecia areata, both for its stimulating effect and its anti-parasitic properties; twenty to forty grains to the ounce. The seborrhœas and seborrhœic dermatitis, wrongly called seborrhœic eczema, best respond to either sulphur alone, or in combination with resorcin or salicylic acid, in the following combination. If upon the scalp, resorcin, alcohol, glycerine, of each two drachms, and rose water, four ounces. If a tonic effect is as well desired, tincture capsicum, one drachm, may be added and instead of rose water, two ounces each of alcohol and bay rum. Upon other parts of the body, the compound zinc sulphide lotion (a drachm each of zinc sulphate and potassium sulphide. to four ounces of rose water), or the following combination: Resorcin and sulphur, of each a drachm, to one ounce of cold cream, act well. Ivy poisoning, in mild forms, responds very readily to the lotio calamine, with the addition of about two per cent. carbolic acid. Pusey recommends, in the early cases, thorough washing or scrubbing with soap and water, to remove the active principle toxicodendrol, then a washing with ninety per cent. alcohol, to dis-

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solve any remainning active principle, and finally a dilute solution of subacetate of lead, to precipitate any remaining toxicodendrol, which must be removed at once. Erysipelas best responds to the application of pure carbolic acid, controlling its action with the use of ninety-five per cent. alcohol. Saturated solution of sodium hyposulphite is of benefit, and as well in ivy poisoning, ichthyol, frequently dose good. Psoriasis, questionably parasitic, demands marked stimulation; the following usually produces good results: Tar, one drachm; ammoniated mercury, forty grains; resorcin, twenty grains, and rose ointment, one ounce. In concluding my paper, I shall lay stress for a few moments upon the importance of the proper application and removal of ointments and the various substances used in dermatologic practice. It is unfortunately a notorious fact, that very few people understand how to use the various substances prescribed for them, and just as unfortunate is the fact that about the only instruction a patient receives, is, "there, use that." Now it is of the utmost importance whether a patient should be advised to rub an ointment in well, or whether it should simply be applied. In some of the acute dermatoses, mild, gentle rubbing in will be tolerated, with marked benefit. When I say rubbing in, I mean with the palm of the hand, exerting firm but gentle pressure. In such conditions as scabies and psoriasis, and where marked stimulation is desired, decided rubbing in, is necessary, often taking as much as an hour, to cover extensive areas. If it be necessary to apply an ointment, the same can nicely be done by applying upon absorbent cotton, a little care and patience, however, often being necessary. Lotions, such as the lotio calamine and alba, should be dabbed on; a small quantity should be poured out, into a saucer, after thorough shaking, and then lightly applied, by means of old pieces of clean linen, allowed to dry on, and then repeated until at least several coats have been applied. In pustular conditions, the same lotion should not again be used, which will prevent further infection. Absorbent cotton should not be used as an applicator, as it takes too much of the precipitate contained in the lotions. The proper removal of a dressing is always facilitated by the free and liberal application of the unguent used, thus preventing sticking. Proper removal is as well aided, by the use of absorbent cotton, upon which the ointment has been spread, for if adherence should

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at all take place it can quite easily be removed in small particles, which does not interfere with the healing process, which may already have taken place. I am indebted for this suggestion to Bulkley, of New York. Dressings or ointments should never be removed roughly for obvious reasons. Water should never, never, be used to assist in the removal of applications, or dressings, olive oil, always. It is as well a mistake to renew dressings too frequently, if the condition is progressing nicely let it alone, pus infections only need frequent attention.

DISCUSSION.

DR. E. M. GRAMM: This is a paper which is very hard to discuss from a materia medica standpoint. I would, therefore, advise every one to make a thorough study of Dr. Bernstein's statements as he has presented the subject in a classical manner. You will find many things in his paper which will prove of value to you in dealing with dermatological cases.

One thought struck me as I listened to the paper, and that is that many times remedies which help a certain case and which look as though their application was indicated in a succeeding one fail to bring about the good that was intended. Many of us who are firm believers in our law of similars for use in the selection of a remedy to be administered internally believe that there are yet other laws which have not been formulated, but which some bright and far-seeing mind in the medical world will point out to us in the future. When that shall take place there is no doubt in my mind but that the method of selecting the topical application will be found to be possible under a certain law according to indications which we all have met but which we so far have not been able to range into classes. Work such as Dr. Bernstein has done will be a portion of the material to be used in formulating the method of selecting the drugs to be used on the skin.

Sometimes we are very much disappointed when we prescribe a remedy locally and find that instead of relief a decided aggravation occurs, even from very mild local applications. This is not due to the fact that the disease is difficult to treat or that the drugs contained in the application are the wrong ones, or that they have

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been used in an improper strength, but many times is due to the selection of an improper excipient. In numerous cases physicians have brought patients to me in whom progress towards recovery was not taking place because the ointment base (where an ointment was used) was too thick or too thin. For instance, where it is desired to get a mild effect from remedies it is imperative that a thin ointment base be used. To take lanolin for a base under such circumstances would, in the majority of people, bring about an aggravation, while the use of petrolatum or cold cream would soon cause improvement.

Every one who has had anything to do with skin diseases will agree with me when I say that at times we come across cases in which it is very hard to find clear-cut indications for an internal remedy. We know that certain classes of diseases run a certain course and manifest a certain type of lesions, but the peculiar symptoms that indisputably lead to the administration of the similimum are not plain and we cannot base a prescription on the others. There is no doubt but that many skin diseases are due to internal causes, but those causes are often hard to find. In consequence many of our physicians jump to the conclusion that some taint, some inheritance is responsible for their existence, and prescribe remedies accordingly, many times without indicating symptoms for that remedy being able to be demonstrated. Take psoriasis as an example. I have been called in consultation many times in cases of that disease, and the attending physician has asked me, What remedy do you see indicated? We do not know the cause of psoriasis, and the patients suffering from it are usually magnificent specimens of health (so far as we can discover). They many times do not complain of anything that needs to be remedied. The lesions are apparently identical in different cases, and yet, when we prescribe a certain remedy in one case and get a certain result in the next case a totally different one follows its use. This state of affairs is distracting.

It is necessary for every physician to study the materia medica of external remedies very thoroughly in order to get results. Haphazard prescribing is extremely disappointing. It is a crying shame that many physicians will prescribe all kinds of proprietary external

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applications without knowing the ingredients of those preparations and entirely on the say-so of some manufacturer's agent.

Another thought and I am done. You cannot suppress an inflammation of the skin any more than you can suppress an inflammation of the liver or of the heart. You can use too strong local applications, but in such a contingency you will not have to wait ten or twenty years to find this out. The next time the patient comes to see you he will forcibly impress on you the fact that he is worse, and that he became worse soon after applying the offending medicament. You will not be able to cause the manifestations of inflammation of the skin to disappear and leave the patient in good health and then have that disappearance undermine his health many years afterwards.

If there is any one thing that this paper would lead us to do it is to study the effect of external remedies, the strength in which they should be used and the suitable base with which they should be incorporated.

DR. Z. T. MILLER: It is a delightful thing to hear somebody talk about scientific deductions, but so far as I personally am concerned, I would not use external applications, and the reason I do not use them is that I have had certain bad results follow their application. It may have been that the proper remedies were not used, but I do know this, I was sent to see a child who was in a comatose condition; the physician in attendance had used zinc ointment for the treatment of a skin condition, and with the disappearance of the condition meningitis set in. I assured the mother that if the eruption came out again the child would get well, and it did. I know of a woman who came to me with shortness of breath; she was scarcely able to talk. She told me that this condition dated from the disappearance of a skin eruption. I could cite several cases of the same kind. One woman complained of having a pain in her thumb, she said it felt as though the thumb would drop off. I treated the case long enough to find out that something was the matter with her. I gave her some sulphur, and the next time she came into see me she had as nice a crop of eczema as I have ever seen, and the pain in the thumb had disappeared. These cases are sufficient to convince me that a local application in a skin disease is

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something that you want to watch very carefully. Another patient who has a contracted chest dates his condition from an attack of eczema, which was treated locally; when the eczema disappeared the child got worse. That there is some relationship existing between the internal manifestations of certain diseases and skin lesions is to my mind a settled fact. I believe that in many conditions that are incurable, such as tuberculosis of the bowels, the real cause would be found to be suppressed psoriasis or eczema.

DR. T. H. CARMICHAEL: I do not for a moment doubt the accuracy of Dr. Bernstein's or Dr. Gramm's statement and yet there are some coincidences which make a good many hesitate in making external applications of remedies. We believe that there are certain skin manifestations the causes of which come from within the organism. In the case of other conditions, such as ivy poisoning, etc., we are justified in using external applications; but I have had cases that I could not explain otherwise than by the fact that there must be a connection between the suppression of the skin lesions and the appearance of the disease. One case that I had been treating for neuritis developed an eruption on the hands. He went to a dermatologist, and under his treatment the hands cleared up. In less than two months afterwards a rapidly growing tumor appeared in the left arm. A surgeon who removed this tumor said is was encapsulated, and that the growth would not recur. However, the growth did return, and the patient used the arsenical paste treatment, which destroyed the tumor but the eczema reappeared. Another case which I was treating for threatened abscess of the liver developed a general eruption on the face and other parts of the body. An old school physician treated him for ivy poisoning, and at the end of ten days the eruption disappeared. While making a visit to his physician he fell prostrate to the floor. His life was saved by the recurrence of a mild form of the skin manifestations.

DR. E. M. GRAMM: You know the old saying *post hoc, ergo propter hoc*. A phenomenon happens after another, therefore the latter is due to the former. This is not good logic.

A patient who comes to us for the treatment of a skin disease should be examined as to the conditions of his general health, as many people show disease of some other organs in addition to the

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skin affection. We have some cases of cataract that develop during the progress of a skin disease. Now we know that the epidermis and the lens of the eye develop from the same layer of cells in the embryo. Can you say, therefore, that the remedies which cause the disappearance of the skin lesions is the cause of the appearance of the lenticular changes. In such a case there is a disease wihch manifests itself in epidemic structures, of which the lens of the eye is one.

No one who is a student of medicine can believe that the external treatment is the only one to use. Dr. Bernstein brought out that one side and his study of external remedies is to be taken only that way, for there have been thousands of cases that have been treated by dermatologists, and in them no ulterior manifestations have shown themselves, the patients have remained well afterwards.

Skin diseases may be due to wrong eating. The question of diet is not well understood by many of us. The matter of the mastication of food is not even dwelt upon with sufficient intelligence. Only a year ago some experiments were made concerning the proper mastication of food. Healthy individuals were taken for the experiments, and they were made to masticate their food until the characteristic taste of the food was made to disappear entirely. When that was done the fæces were almost colorless and the odor which is considered to be the normal one was completely absent. These results open a field for further investigation and thought.

Do not forget that the removal of the ointment is as important as its application. When you tell a patient to apply an ointment twice a day, tell him also to remove it twice a day. If a thick ointment base has been prescribed it will be necessary to add something to the ointment on the skin that will thin it and allow it to be removed without irritating the surface diseased. Olive oil is a good substance to use for softening the majority of ointment bases, and the complete removal of all medicaments can be accomplished by gently wiping with a pledget of cotton dipped in olive oil, but always after the preliminary softening with olive oil.

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THE CLINICAL SIGNIFICANCE OF IRREGULAR PULSE.

G. MORRIS GOLDEN, M. D., PHILADELPHIA.

In studying the pulse and its irregularities, one cannot attempt to go into a minute description of its many forms and phases, but to group them under one head, terming it irregular pulse, or arrhythmia as may be preferred.

One fact is extremely easy, that is: How readily, and with what ease an irregular pulse is recognized, but there is probably no other abnormality, whose clinical significance is so overshadowed, or harder to interpret at times than that of irregular pulse, when it behooves us to give a plausible or intelligent cause and effect of same.

There are two factors to be considered in studying irregularities; first that of rhythm; secondly, that of force, but as these two conditions are closely related, and as the majority of irregularities resolve themselves into variation of duration, the study of the rhythm is most important.

Mackenzie, in his work "The Study of the Pulse," has classified them into two types for simplicity sake, designating them as the "Youthful Type," and the "Adult Type." Suffice to say of their characteristics, that the "Youthful Type" is designated by irregularities which occur through variation in the duration of the diastolic period of the cardiac cycle, while in the "Adult Type" of irregularity there is a variation of the systolic period as well as in the diastolic period of the cardiac cycle.

The youthful type is seen most frequently after fevers, with slowing of the pulse, and is often noticed in younger years without any apparent cause, the probabilities being that every child has a slightly irregular pulse at some period of its life before it reaches its normal physiological equilibrium of 72 beats per minute. Of the Adult Type which, as I have mentioned before, shows variation in the systolic, as well as diastolic period, is due to the early occurrence of ventricular systole, or a dropped beat, giving us the shortened systole, and a prolonged diastolic period; and the vast majority of pulse irregularities in adults correspond to these two conditions.

When an irregular pulse is discovered our thoughts are at once

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concerned as to what it means, and what its significance as regards the patient's good health. Infrequently we are met by patients who have been wrought up into a nervous frenzy, and having all the diseases of the heart known to the medical science, by being told they had an irregular pulse and the awful calamities that may follow. Thus Traube, who was the first to call attention to the pulsus bigeminus, looked upon it as of fatal significance. Tripier thought when not due to digitalis, or associated with valvular disease, was associated with epilepsy, while Richardson claimed that the missed beat was the sign of impending dissolution, from these conclusions, it seems that the old mistake which is often made, of generalizing or drawing conclusions from insufficient data.

The question arises, Can irregular pulse occur in an apparently healthy individual? We may say for all clinical purposes that it is possible. You have no doubt seen time and again subjects exhibit irregular pulse without any apparent signs of ill health, and at the same time pass through a serious illness, or do hard, laborious work without any inconvenience to the person. There surely cannot be any marked or material changes in such a heart, for at least it is quite capable of performing its duty.

The relation of irregularities to the various heart diseases is a large subject, and one which I have not time to discuss in a general paper of this kind, but I wish to state briefly, that it may be one of the symptoms of any form of heart disease. Its presence and significance is well known in the Nutral lesion, and may occur quite early. Of its relation to the Aortic lesions, it is more serious, for it is here the result of myocardial, and atheromatous changes, and those subsequent to them. Of myocardial changes it is probably more significant, and has been looked upon as pathognomonic of such changes. As an accompaniment of failing heart it is almost constantly found, whatever the cause of the failure may be, whether myocardial, valvular disease, atheromatous changes, or Bright's disease. But in these conditions irregular pulse is not the salient feature, it depends largely upon associated conditions, and nutrition, and especially of the heart muscle, and what is demanded of it.

Irregularities are frequently found in connection with the various neuroses, and from the effect of various toxic substances upon the heart.

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You have all no doubt been struck with the similarity of the pulse in diseased and healthy hearts. Frequently one meets a heart which is dilated, probably one or more murmurs, irregular pulse, and to all appearances no clinical symptoms, while on the other hand a patient may be encountered with all the clinical features of a cardiac disease, and upon examination, hardly find enough demonstrable to warrant such a condition. Why is this? It can be answered as follows: A certain amount of arterial pressure must be maintained in order to have the proper functions of the organs maitained; in the one case this condition is fairly accomplished, without the heart using its full capacity of muscular force or reserve strength, while in the latter case this whole reserve has been called into action, but is not sufficient to maintain the normal equilibrium. This is what is termed by Mackenzie as the "Cardiac Field of Response," and is the work the heart is capable of doing when called upon to a certain extent. This field gradually expands until middle life, after which it gradually diminishes.

In some individuals a greater predisposition to irregularities is shown than in others; undue excitement, certain drugs, tea, coffee, tobacco and at times digitalis, may cause such in susceptible individuals.

Irregularity of the pulse is quite common after middle life, and may only be detected at intervals, as evidenced by repeated examinations, in which it is absent, or slight excitement may produce it. It can probably be looked upon as evidence of some fibrotic or myocardial change, for in some such subjects sudden death has occurred. The relation to febrile conditions is worthy of note. The tendency of fever is to quicken the pulse, and when any condition accelerates an irregular pulse, the irregularity usually disappears, this being a favorable sign. This fact holds true when an irregular heart is stimulated from any cause, whether fever, excitement, or muscular exertion. On the other hand, if this increase of rate is not followed by the disappearance of the irregularity we must look for trouble ahead.

The stage of the condition in which it occurs, is important; the earlier, the more grave, and this is well marked in croupous pneumonia, for those cases developing an irregular pulse before the crisis are invariably fatal. Mackenzie states he has not found an

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exception to this rule. Its significance is probably not so marked in the catarrhal type, and the aged. I call to mind two cases of such type in the aged; one 81 years of age, the other 86 years; in which irregular pulse occurred in the latter course of the disease, both going on to recovery. The probability is that these patients had a pulse of irregular character before the illness, which disappeared on the presence of the stimulating effect of the fever. Irregularities are frequently found on the subsidence of the infectious fevers, such as typhoid, pneumonia, etc., and are usually indicative of malnutrition, and exhaustion, in which the heart muscle suffers and calls for rest and feeding.

After reviewing as briefly as possible the more important clinical relations of irregular pulse, what significance can we place upon it, or at what conclusions can we arrive?

It must not be supposed that not any significance should be placed upon an irregular pulse; but we should not jump at conclusions, and say this patient has a grave cardiac disease, or condition complicating their disease, and prepare them for their doom.

It is frequently present in persons dangerously ill, no matter what the cause; it is only one symptom denoting a cardiac weakness, and not the whole picture, therefore it depends upon us to make a thorough examination of our condition at hand before we make any definite conclusions.

It may be the first sign of an impending trouble, when associated with other diseased conditions, but when an irregularity is the only symptom present, with other conditions being satisfactory, and a heart not showing any material change, it is then that the terrible consequences of irregular pulse should not be harbored. The outlook depends largely upon the associated conditions; for instance, a person with rheumatic fever may have an occasional irregular pulse, with slowness, its terrors are not great, but picture, on the other hand, a pneumonic condition, with high temperature, irregular pulse, and marked lung changes, then it is that our outlook has a decidedly different hue.

As associated with the heart conditions, per se, it is unfair to patient and ourselves to draw conclusions without reference to other cardiac requisites; by these I mean: 1. The presence of any valvular lesion. 2. The condition of the heart muscle, not as to

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strength alone, but as to its nutrition, as evidenced by sclerotic changes at the aortic opening, and those of the coronarys, for if such is the case, the nutrition of the cardiac muscle is impaired, and myocardial change will sooner or later evidence itself. 3. The general nutrition of our patient, and the presence of an anemia, which is that of the secondary type. These conditions considered in total is the only manner in which we can arrive at a definite conclusion.

In closing allow me to summarize as follows: 1. Do not place too much significance upon an irregular pulse as an only symptom, but interpret the associated conditions, weigh them thoroughly, and the value of each before making a definite conclusion.

2. Although the symptom may be of no special importance, still it may frequently be the result of serious cardiac change.

3. That an irregularity which is not persistent is less important than a continued one.

4. The disappearance of an irregularity on exertion is favorable, while one which increases is unfavorable, and usually indicative of myocardial changes.

5. An irregularity showing early in the course of the febrile diseases should warrant a very guarded prognosis.

6. And lastly, do not depend upon an irregular pulse as the guide to the true cardiac condition.

SHALL WE PRESERVE THE INTEGRITY OF THE HOMŒOPATHIC SCHOOL.

EDWARD M. GRAMM, M. D., PHILADELPHIA.

The early years of the twentieth century mark an epoch in medicine which is characerized by remarkable activity in legislating on medical subjects. The far-reaching results of the various laws already placed on the statute books of the different States are not within the ken of the participants in recent occurrences. The endeavors which have thus far been put forth are not for the broadening of the foundations of our science nor are they for the scientific advancement of medical knowledge, neither are they intended to make the healing art a greater boon to suffering humanity. Every

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struggle and every suggestion that is being advanced in this legistive campaign has a political object. We are told that no matter what is the guise of the legislation nor how ignoble the coalitions necessary to force it through the represetnative bodies of the various States, the end and aim of the activity among the adherents of the old school is the unification of the entire medical profession. No explanation is given as to why this unification must be accomplished with a club rather by diplomacy, and the coming together, man to man, of the believers in allopathic methods and the believers in the law of Homœopathy. On the contrary, all of whom I have knowledge who have been asked to affiliate with old school organizations have been distinctly informed that a prerequisite to membership was a positive agreement not to introduce discussions on the subject of Homœopathy into the meetings, to deny that the individual continues to prescribe according to the homœopathic law, to withdraw from any societies professing to study the effects of drugs administered homœopathically, or not to affiliate with them, and, finally, to agree to ostracize every physician who is satisfied that he can select drugs according to *similia similibus curantur*. I am satisfied that my experience is not unique, but that other members of this society will corroborate the statement that, veiled or naked, conditions attach to a graduate from a homœopathic college accepting membership in an old school society that no one who values his manhood can accept.

Is it not, therefore, a fact that in order to preserve the boon that the teachings of Hahnemann have incorporated in medical lore it is necessary that the homœopathic school shall remain a separate entity, and that the law of Homœopathy shall be developed and confirmed over and over again until it will become impossible for any student of therapeutics to deny its truth and efficacy, until it is impossible for any teacher to ignore it in the curriculum of any college in the world? The time is not yet ripe for us to sink our individuality.

Let us recapitulate. What has been accomplished by the homœopathic school of medicine in the past hundred years? Let us enumerate the incontrovertible dicta that have made a marvelous impression on medicine.

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Firstly. We have demonstrated the best method of ascertaining the effects of drugs on the human economy.

Secondly. We have demonstrated the best method of applying drugs for the cure of disease where drug effects are applicable.

Thirdly. We have brought about a reform in therapeutics that is denied by none.

Fourthly. We have demonstrated that quicker and more certain cures are brought about by homœopathic prescribing than by any other where drugs are required to cure disease.

Fifthly. We have demonstrated that incurable cases live longer and have their suffering more certainly alleviated by the homœopathic method of prescribing than by any other.

Sixthly. We have established colleges, hospitals and dispensaries that are patronized by those who demand homœopathic teaching and treatment.

The time allotted for a paper to be read before this society will not allow of an elaboration of these statements. From time to time, dating from the establishment of Homœopathy up to the present, the student of homœopathic literature will find tht each one of these propositions has been dealt with in extenso, and its truth established. Statistics which cannot be denied have been collated, many now unfortunately relegated to partial oblivion, that show how much of an advance in therapeutics Homœopathy has proven itself to be. We have been made the repository of medical truths which, if we would be true to our trust, we should affrm in our teachings, in our practice and in our lives, truths that the laity holds us responsible for keeping intact, and the whole power of the old school is now and always has been arrayed against us living up to our responsibility. When full acknowledgment of the truth of Homœopathy is honestly made by every scientific physician, when in every medical society in the world it becomes possible for cures made by remedies selected according to the homœopathic law to be reported and discussed in the spirit of fairness and with a view of advancing the interests of the sick and suffering, then it will be possible for all sects to fraternize, and for a common brotherhood to press forward, shoulder to shoulder, to conquer man's fell enemy—disease. But that time is not yet.

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We have established colleges for the teaching of Homœopathy, and they have proven to be colleges that are second to none in expounding all that is known of the science and art of medicine from its foundation to its capstone. They continue to exist by reason of the fact that students demand that Homœopathy shall be taught to them. The cry for a proper presentation of the law of Homœopathy will not be repressed, and nothing but dissatisfaction is heard in the profession against that institution which does not conscientiously comply with the demands made on it, and which it promises to fulfill. Will medicine be the gainer if we allow siren songs to lure us on the rocks of amalgamation and the closing of our institutions of learning?

We have established hospitals and dispensaries. To them thousands resort each year in the full conviction that they have something better to offer in the direction of the alleviation and cure of disease than old school hospitals and dispensaries can. These thousands look to us to perpetuate our school, to perfect our system, to keep ourselves from sinking in the medical mire yclept rational medicine. Will we be guided by the true light if we allow that which has been vouchsafed us to be put under the bushel of intolerance?

Let us, for a moment, look upon the conditions which exist in the old school and which will not be wiped out if an amalgamation of the schools were accomplished at the present time.

Firstly. The old school denies the truth of the homœopathic law. This denial is not based on investigation nor upon a logical proof that our law is false. *The homœopathic law has never been disproven.* It has been decried, its votaries vilified, its application ridiculed, but disproven, never.

Secondly. The old school demands that, in order to affiliate with it, believers in Homœopathy shall renounce their belief even though they continue to practice according to their convictions. The less comment made on this demand the better.

Thirdly. The old school is employing every means in its power to accomplish its desire to throttle the advancement of our school. Homœopathy must be subservient to it under the law if that can be made possible in any way whatever. No matter what enactments may become necessary to bring about such a condition nor how long

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it may take, every energy is now being bent to deprive our school of a legal status in the United States. Can we afford to have that occur?

Homœopathy will never die. Truth cannot be destroyed. If certain members of the profession will demonstrate that they are so recreant to their trust as to make it possible to have the legal status taken from Homœopathy there will still remain a proportion of Homœopaths whose faith in our law and whose proof of its efficiency will lead them to perpetuate it—AND HUMANITY WILL BLESS THEM.

PRURITUS ANI.

GEORGE B. MORELAND, M. D., PITTSBURG.

Pruritus ani can be and has been treated unsuccessfully in more ways than almost any other curable affection.

With the possible exception of cancer and tuberculosis, the term "intractable" has been more often and more aptly applied to this affection than to any other involving the anus or rectum.

Any one looking over the field of medical literature on this subject cannot but be bewildered by the conflicting views of the different authors as to the cause of this distressing symptom, and just about the time they begin to emerge from the mental haze produced by the various views expressed on this point, they are plunged again into deeper darkness by the innumerable and widely diverse plans of treatment advocated.

Some, the minority however, attribute the cause of this symptom alone to such constitutional diseases as diabetes, gout, rheumatism, tuberculosis and syphilis, and advocate and limit their treatment to constitutional and dietetic measures.

Others are surprised and also chagrined when operations for the removal of large internal hæmorrhoids, fistulæ or polypi are not always followed by relief, and prefer to consider their patients neurotic rather than seek further for some other local or constitutional cause.

While the conditions above mentioned may be the cause of this symptom, it is my belief that the vast majority of cases of pruritus ani are caused by an unusual and unnatural amount of moisture or

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discharge around the anal region, which is produced either by lesions about the anus, or by some congestion or pathologic change in the rectum or sigmoid. One might go further and say that whenever a patient complains of a pruritus that localizes itself around the anus, the pruritus arises from some change from the normal somewhere in the pelvic region, no matter whether that abnormality is primarily dependent upon some constitutional affection or not.

The moisture or discharge around the anus, whatever its cause, slight and scarcely noticeable at times, eventually brings about changes in the epidermis in this region. This change may be almost imperceptible, or the skin may change its color, thicken, and have a white or so-called "water logged" appearance.

The treatment of pruritus ani consists in discovering and eliminating the cause, and then restoring the skin, when changed, to its normal state.

The causes of pruritus ani are external, internal, constitutional and reflex.

Included in the external causes are erythema, herpes, any variety of eczema, external varicoses, skin tabs, uncleanliness, insufficient ablutions of the anus, and parasites.

Among the internal causes are fissures, fistulæ, polypi, hæmorrhoids, chronic diarrhœa, dysentery, and worms, especially the oxyuris vermicularis.

Gout, lithic acid diathesis, hepatic disorders, which may or may not be accompanied by constipation, and diabetes, are the more prominent constitutional causes.

Urethral and vesical irritation and any change in the pelvic region capable of causing nerve irritability may reflexly affect the anus and cause pruritus.

There is frequently found present in this affection, in fact, almost invariably, a tight and irritable sphincter, together with fissures of variable extent, some so small as to be almost undiscoverable.

No matter what other condition may be present and accountable for the pruritus, it is certainly not the height of wisdom to cut and carve, to paint the parts indiscriminately with cauterizing agents, or apply anæsthetizing solutions, or make use of astringent medicaments, and expect permanent relief in the presence of a tight and irritable or an overgrown sphincter.

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Divulsion, preferably, I believe, under such a safe and satisfactory anæsthetic as nitrous oxide gas, is one of the best and most frequently indicated steps in the attempt to cure this affection.

Divulsion benefits the local circulation and, if other causes for the pruritus exist, permits the application of other local measures with less discomfort and distress.

Ulcers or fissures after the use of cocaine or orthoform may be curetted if there is present any amount of inflammatory product, or merely stimulated by the application of silver nitrate, ichthyol, balsam of Peru, etc. A small ulcer in the posterior commissure is frequently found to be the cause of pruritus. It is sometimes exceedingly small, and may be overlooked unless carefully searched for. External hæmorrhoids and skin tabs should be excised under a local anæsthetic.

Sutures are rarely necessary after their removal, as there is comparatively little bleeding and healing takes place with less pain and about as promptly as if the wound were sutured.

Papillæ, if hypertrophied, or even if apparently normal in size, should be removed if no other cause can be found. This is easily accomplished after the use of cocaine or eucaine.

Pockets above the papillæ should be treated with silver nitrate, Balsam of Peru, or ichthyol, if they show evidence of disease, or treated as a routine measure in order to eliminate them as a possible cause of distress.

Polypi and internal hæmorrhoids should be removed in whatever way in the judgment of the attendant may seem indicated.

Catarrhal diseases in the rectum and sigmoid should receive proper attention.

Irrigation with boracic acid or some astringent, such as fluid extract of hydrastis or krameria or silver nitrate, as the severity of the pathologic changes may suggest. After irrigation, from three to four ounces of a solution of hydrastis or krameria may be injected into the rectum and allowed to remain. This is preferably done at night.

While any or all of these causes are being attended to, an attempt should be made to relieve the itching.

Cleanliness of the parts is of prime importance. The application of very hot water before retiring, either alone or combined with hamamelis or carbolic acid, acts very beneficially at times. Black

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wash also is effective. When slight abrasions or fissures are present ichthyol is efficacious.

When the skin is thickened some preparation that will destroy it and restore it to its normal state is called for.

Carbolic acid may be used, but preference should be given to nitrate of silver in strength ranging from a twenty per cent. to a saturated solution. If there exists any break in the continuity of the skin, the application of cocaine or orthoform will prevent severe suffering incident to the application of the silver salt.

Adler advises the use of Citrine ointment in full strength after the application of the silver, but I have found that a diminished strength, about 50 per cent., is just as useful and less likely to cause distress. The ointment is applied night and morning, and a gauze pad, held in place by a T bandage, is constantly worn.

If the itching becomes unbearable, the anus should be bathed in water as hot as can be borne, but never rubbed or scratched. This latter injunction is often disobeyed, but should be insisted upon. If the treatment causes excessive tenderness, some mild and soothing ointment should be substituted, or the citrine ointment further decreased in strength.

There are many other methods of treatment, but this one has been found more generally applicable than any other.

As this subject has been considered with special reference to its local treatment, I shall not touch upon the constitutional treatment, except to suggest the use of whatever remedy seems appropriate and indicated in each individual case that presents itself. I have found no special remedy particularly efficacious, and as it has been my custom to use some local measures in every case, believing as I do that almost invariably there is some local cause, my experience with the remedy alone has been of no value.

Pruritus Ani, then, calls for the discovery and elimination of all local causes, no matter how trivial they may seem, such constitutional treatment, and dietetic changes as may have a favorable influence on the restoration of the body to its normal state, and the local application for the restoration of the skin to the normal, using strong or mild caustics as required.

I desire to say in closing that patients should be warned that the treatment may last from one day to six months, and that only persistent, unceasing attention brings desired results.

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MENINGITIS.

ANNA D. VARNER, M. D., WILKINSBURG.

There are four common kinds of meningitis, simple acute meningitis, secondary lepto-meningitis, cerebro-spinal and tubercular meningitis.

In the acute variety the inflammation is confined principally to the arachnoid and the pia mater, as is also the case in secondary lepto-meningitis. The former, however, is due to a blow or fall, exposure, worry or overtaxing the brain, while the latter is complicated with such diseases as pneumonia, septicæmia, mastoiditis, erysipelas or ulcerative endo-carditis, and the pathology is that of purulent inflammation.

In cerebro-spinal meningitis the inflammatory process involves simultaneously the membranes of brain and spinal cord. These membranes are at first congested and then exudation of pus corpuscles, blood cells, fibrin and serum takes place into and beneath the pia mater. Goodno tells us the surface of brain may be bathed in pus, that the exudation and inflammation is found greatest in depressions between convolutions, especially in fissure of Silvius, about the optic commissure, the pons varolii, and the surface of the cerebellum. In severe protracted cases a sero-fibrinous or purulent exudate may be found within the meshes of the arachnoid. The cerebral substance itself is inflamed, softened and the ventricles contain an excessive amount of serum.

Cerebro-spinal meningitis is usually epidemic, though there are often sporadic cases. Sometimes the cerebral symptoms predominate, sometimes the spinal.

Tubercular meningitis is an inflammation pre-eminently of the base incited by the tubercle bacillus. The tubercles are developed mainly in the pia mater. The base of the brain and the nerve trunks are bathed in exudate and the lateral ventricles are distended. The fluid may extend to the lateral, and even occasionally to the superior surface of the brain. It is either associated with tubercular lesions in other parts of the body, or is found in a subject with a pronounced hereditary tendency to the disease.

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The clinical course of these four forms of meningitis is similar. Any one of them may have a sudden onset and pass through the various stages with terrific rapidity, ending with convulsions, coma and death. Or any one, especially the tubercular type, may forewarn us with such symptoms as peevishness, sleeplessness, headache, dry cough, constipation, wrinkling the brows, chewing the lips, grinding the teeth and rolling the head. Once fully developed there may be in any form vomiting, ocular disturbances, contracted pupils, increased sensibility to light and sound, the slow or irregular rhythm of the pulse, irregular respiration and temperature, and the obstinate constipation, or still later in the disease, involuntary stool, retraction of the abdomen, sensitiveness of the spine, rigidity of muscles of neck, convulsions, coma and collapse.

Added to these characteristic symptoms are vague pains in various parts of the body, exaggeration or absence of the patellar reflexes, cutaneous hyperæsthesia or anæsthesia, cold feet, cold sweats, difficult deglutition, subsultus, paralysis of some parts of the body, blindness and deafness. The clinical course being so similar the differential points are: The complication with some other disease in the secondary lepto-meningitis, the duration of the disease and the history of the patient in the tubercular type, and the four important diagnostic signs in the cerebro-spinal, early retraction of head, temperature record, eruption and lumbar puncture. Thus are we taught by lecture and text-books, always the common typical cases offered as an example. But experience is quite another teacher, unfolding to us as the years go by unusual atypical cases taxing all our powers of thought to place them in the class to which they belong. The following cases are offered as examples:

Case number one was a beautiful, well developed child, one year old. He was apparently in good health when he awoke in the morning. At 9 A. M. he was in convulsions. The hot bath with cool cloths to his head, dilatation of the rectum, high saline enemas, chloroform anæsthesia were all of no avail. Belladonna, cuprum, cicuta, opium—in high and low dilution—were worse than useless. The convulsions continued with absolutely no relaxation of the muscles until 5 P. M., when death ended the little fellow's sufferings. There were only four symptoms, the convulsions, high temperature, 109° before death; a sort of petechial eruption, which ap-

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peared after he had been placed in a hot pack, and an area at the base of the brain which remained hot for hours after the remainder of the body was cold in death. It was a case of cerebro-meningitis.

Case number two was a woman 40 years of age, an old alcoholic. This case first simulated stomach trouble with indigestion, nausea and vomiting. Then it appeared like hysteria with its peculiar nervous manifestations. Next her strange hallucinations suggested delirium tremens. Following that came suppression of urine, defective vision and a mild delirium. Uræmic poisoning was suspected, the urine examined and found normal. The bowels then became inactive, not even gas being passed. There was great distention of the abdomen with upward displacement of the diaphragm. Thus the symptoms changed every few days during the eight weeks of her illness, until in regular rotation the functions of every organ in the body had been disturbed. As one group of symptoms appeared the previous group subsided. Her temperature was normal until the last week when it rose to 101°. The cutaneous reflexes were exaggerated. Her delirium which was exactly like the foolishness of a partly intoxicated person was a more or less constant symptom. So were the ocular disturbances. Finally the patient lapsed into a comatose condition and died in profound coma.

This patient evidently suffered from what Da Costa describes as hæmorrhagic pachymeningitis, which is characterized by extravasation of blood between the dura mater and the pia arachnoid. and is commonly found in chronic alcoholism.

Case number three was a girl aged 9, one of a large family of whom two died in infancy. Parents were apparently healthy. From malnutrition in one child and eczema in another, doubtless there existed some psoric condition. March 2, 1906, the child was at school in her usual health. The next morning she awoke in a feverish condition and complained of pain in left arm. She was restless all day, stomach disturbed, no desire for food. At 4 P. M. her temperature was 102°, pulse 160, respirations very irregular, at times rapid and again slow and sighing: tongue coated, mouth dry, saliva sticky, face pallid, purpuric spots over whole body and conjunctiva, which her parents said had appeared suddenly that day. She lay quiet and had no pain except on motion of her arms and legs.

That night she grew rapidly worse, she had severe frontal head-

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ache, periods of great restlessness alternated with unconsciousness; pulse, temperature and respirations very erratic, nausea and vomiting. Her pupils were normal and reacted to light. The symptoms and appearance of patient indicated a desperate case. On the following day she was a trifle better. No pain now on motion of arms and legs but severe pain in forehead. Ice on forehead relieved pain slightly but caused chilliness up and down the spine. Her face was pale most of the time with sudden flushings. There were no sweats. On March 8th, there was a sudden cessation of all symptoms and for four days she was apparently in a normal condition. Then she had a return of pain for twelve hours with twenty-four hours relief. The periods of pain increased in length while the intervals of relief decreased until March 20th, when the periods of pain were thirty-six hours long with twelve hours intermission. The pain always began with a decided chill of an hour's duration after which her temperature rose to 102-104. For the first time she complained of soreness in muscles at back of neck, and almost desperate with pain in forehead, she supported the back of her neck with her own hands while her attendant pressed on forehead with cold, wet cloths. There were rhythmical contractions of muscles in dorsal and cervical regions, first 40 per minute, then gradually diminishing to 10 per minute. These contractions were only present during that one week. Her pupils reacted to light, but were not uniform or steady, abdomen retracted, bowels slightly constipated, urine about normal, reflexes slightly exaggerated, no enlargement of liver or spleen, no lesions discovered in heart, no sweat except on upper lip, skin dry and very rough. During the first three days of April the patient seemed normal in every way excepting the inequality of the pupils.

On the fourth of April there was exacerbation of all the symptoms, which continued throughout the month, gradually improving until May 9th, when she was discharged cured and has remained so up to the present time, never even suffering from headache. There was no particular regularity in time of return of pain or duration thereof, and no delirium or stupor after the first few days. The purpuric spots disappeared during the second week. The remedies used were bryonia, belladonna, stramonium, cicuta, cuprum ars., sulphur, natrum mur., china, and pulsatilla in high and low dilution, without any apparent improvement until on recommendation of Dr.

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Z. T. Miller, iodide of potash in drop doses was administered, and to that remedy we attribute her recovery.

This must have been one of those atypical sporadic cases of spinal meningitis which our diagnosticians tell us resembles Malaria with its chill and intermitting type of fever.

Case number four was also unusual, not in its manifestations, but because the patient recovered. This little fellow, aged 16 months, had three attacks of pneumonia in one winter. On the second day of the third attack. March 16th, he devloped secondary lepto-meningitis. His condition was serious and distressing, having in addition to all the cardinal symptoms of meningitis (excepting convulsions), the rapid respiration and cough of pneumonia and a profuse exhaustive diarrhœa. The chewing motion of the lips, strabismus, continual rolling of the head or retraction of the neck with the spine bent in a semi-circle backwards, shrill shrieks night and day, dry, hot skin, embarrassed respirations, tremors, the bulging of his head in the occipital and temporal regions, form a picture which can never be effaced from the memory. Towards the end of the third week he lapsed into a profound stupor, his sightless eyes wide open. set and staring.

From all we read in books this boy should have died. From all the consolation offered by professional friends he should have been an idiot or blind, deaf and dumb. However, after two days he awoke from the stupor and made a rapid, uneventful recovery. To-day, after five years, he is as bright and healthy a boy as you could wish to see.

The remedies used were helleborus, argentum nit., cicuta and passiflora, none of which made the least impression upon him. When he fell into a stupor, sulphur in a very high potency was administered. In just such conditions as this, sulphur sets the processes of absorption at work and saves the patient.

In these two cases we have a demonstration of the efficacy of high and low dilutions. There are times when it requires a tincture or a saturated solution to cure a patient, (the enemy cannot always be reached by an airship—on occasions it takes a submarine torpedo boat). There are other times when nothing on God's earth will reach a patient save a sky-high potency of some such remedy as sulphur, silicia, or psorinum. The point after all is to adapt the

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remedy to the patient according to the law of similars, and then use the potency best adapted to the case in hand. Life is sweet to each person and each person's life is dear to his own kindred. The laity look to us to save life, and little care they by what means, so we save it.

DISCUSSION.

DR. C. P. SEIP: I wish to speak of a remedy which I have employed for cerbro-spinal meningitis. I have used it several years now. One of the cases in which it was used was seen by two of our staff who confirmed the diagnosis. It was supposed that this case developed the disease after an attack of typhoid fever. The patient was in a stupor for three or four days. Some time before seeing him I had read of a series of cases which were treated with iodoform. I gave the remedy in the third decimal potency and the patient recovered. About two years after this I saw another child with similar symptoms and gave the same remedy with a like result.

DR. M. M. FLEAGLE: I wish to call your attention to apis mellifica as a remedy in this disease. I remember one case in which there was retention of urine in which it proved curative in a short time.

DR. T. H. CARMICHAEL: A friend of mine was the first to call my attention to iodoform as a remedy in meningitis; he gave it in the third decimal potency, at the same time had the head shaved and had inunctions of it rubbed into the scalp. He reported a series of six cases, in four of which he had good results.

DR. J. J. TULLER: I consider the prognosis of meningitis always grave, not only because of the enormous mortality in certain forms of the condition, but because of the constant tendency to subsequent bad results occurring from the product of the inflammation that has taken place. In the acute cerebro-spinal form the prognosis is always grave and the mortality is very high; in the forms of meningitis that are associated with pneumonia and with typhoid and with any of the acute exanthematous diseases the prognosis as to life is not so grave, as many of these cases and the majority of them, in fact, recover. But as is so commonly the case, they recover with a string

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to it, they leave some bad result following. Of other forms the acute tubercular meningitis is of grave prognosis.

I would consider that it would be an error upon the part of any one to simply define the treatment in a general way that they have applied to meningitis without specifying the character and form with which they are dealing, as we readily see that the prognosis depends upon the form. In that vicious, violent type of cerebro-spinal meningitis which is so quickly fatal where mechanical action has so much to do and remedial work is out of the question, spinal puncture has been advocated with some success, to remove the toxic fluid and to inject substances that will purify and cleanse the vertebral canal. On the same principle where the violent and inflammatory process is in operation, where the prognosis is known to be that of death, and where there is no help from any other treatment, I would quickly advocate the trephining of the skull to remove the superfluous toxic fluid from the cranial cavity, to relieve the pressure and to force into the cavity of the head a cleansing fluid with antiseptic qualities. This, however, should only be resorted to in grave conditions and those that run an acute type, where it would be possible by conquering the inflammatory process to subdue the diseased condition. These cases, however, are of comparative rarity.

The cases that we so commonly meet and are so productive of distressing results, are those that are apt to come into the daily practice of every physician, and these are the toxic meningeal inflammations that take place during the acute sicknesses of childhood, such as teething, scarlet fever, measles, etc., where the gastro-intestinal tract is thrown into a more or less inflammatory state, because of the irritation coincident with the breaking of the two-year molars, the toxic material has poured into the blood and these little systems become thoroughly charged with it, resulting in an inflammation of a toxic character of the membrane around the brain, producing general congestions, and finally, here and there, adhesions with the distressing results that follow later on in life from four to six or even ten to twelve years after.

We have so many of these cases from which have developed the idiot, the imbecile, the epileptic, which might have been relieved had

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the physician been warned to study the conditions as they occurred during the period in which the disease was running its course. To study and make careful record of the attack and to note the character and quality of convulsive seizures, of muscular twitchings over the body and the force and strength with which these attacks visited on the different members of the body, to give key to the localization of these results for future, perhaps operative proceedures, that will break up and relieve this state.

I consider to-day that this is one of the important subjects with which we have to deal because of the wonderful possibilities that lie in front of it and the wonderful good that can come out of a close study of these cases and the consequent operative procedure that will allow of their cure.

THE DIAGNOSTIC AND THERAPEUTIC USES OF TUBERCULIN.

G. HARLAN WELLS, M. D., PHILADELPHIA.

There is no problem in medicine of more importance to the laity or which presents greater difficulties to the physician than the early diagnosis of pulmonary tuberculosis. With modern methods of treatment we are able to restore to health 70 per cent. of all cases when the disease is recognized in its early stage. With the advance of the disease the percentage of cures becomes rapidly less, and when the disease passes into the second stage, with the onset of hectic fever, night sweats, emaciation, etc., but 25 per cent. can be restored to health, and that only after long and expensive treatment. It is evident that by far the most important factor in securing favorable therapeutics results in pulmonary tuberculosis lies in the early recognition of the disease. Unfortunately the early diagnosis of phthisis is a matter of considerable difficulty and one that often baffles the skill of the most experienced specialist. The physician of to-day who waits for the appearance of hæmoptysis, night sweats, hectic fever, well defined dulness on percussion and bronchial breathing, symptoms and signs which were considered essential to a

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positive diagnosis a decade ago, is doing his patient an irreparable wrong, and one that will probably cost him his life. Any agent which bids fair to assist us in the solution of this difficult problem is worthy of our serious consideration, and it is for the purpose of dwelling particularly on its diagnostic value that I have chosen tuberculin as the subject of my paper this evening.

Tuberculin is an agent which has received the highest eulogies from its advocates and the most positive condemnation from its opponents. When its discovery was announced by Koch in 1890 it was heralded as the long sought specific for tuberculosis in all its forms. Within two years, chiefly through the investigations and writings of Virchow, tuberculin was branded not only as useless but as positively dangerous to tubercular patients under all conditions. There is no doubt that Koch's original method of employing tuberculin was dangerous, and that his statements as to its therapeutic value were grossly exaggerated. It has been clearly proven, however, that the disastrous results which followed the use of this agent, both in Koch's own cases and in those investigated by Virchow, Williams and others, were due to the use of tuberculin in too large doses, and in its administration in cases utterly unsuited for its employment. During the last five years there has been a renewal of interest in tuberculin, and recent investigators, proceeding with a proper appreciation of the dangers attending its administration, have demonstrated that when properly used in suitable cases tuberculin is a valuable diagnostic and therapeutic agent.

As there are several tuberculins now used, and as these differ widely in their composition and effects, a brief description of their method of preparation is essential to a correct understanding of their action and uses.

The original tuberculin discovered by Koch, commonly called Koch's "old" tuberculin, is prepared by growing tubercle bacilli for several weeks at body heat, in a large flask containing glycerine and veal broth. The contents of the flask are then evaporated over a sand bath to one-tenth their original volume and filtered twice through a Pasteur-Chamberland filter. This preparation represents a glycerine extract of the metabolic products of the tubercle bacillus, and contains none of the organisms themselves. On ac-

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count of the large amount of glycerine it contains it will keep indefinitely. When employed clinically it is usually diluted with a ½ per cent. aqueous solution of carbolic acid.

Koch's "new" tuberculin or tuberculin "R" is the preparation usually employed at the present time for therapeutic purposes. It is prepared by growing virulent human bacilli on a solid medium. The growth is then removed, dried in a vacuum and triturated in a steel mortar to kill the bacilli and to liberate the toxic matter they contain. This powdered mass is then emulsified with distilled water and centrifugalized. The clear supernatant liquid is then removed and constitutes tuberculin "O." The centrifugalized deposit is dried and triturated again. Distilled water is again added, and the whole recentrifugalized repeatedly, until hardly any residue remains. The combined superincumbent solutions (except the first or tuberculin "O.") are then mixed and constitute "new" tuberculin or tuberculin "R." It is preserved in 20 per cent. glycerine solution and standardized to contain ten milligrammes of solid substance to each c. c.

TUBERCULIN AS A DIAGNOSTIC AGENT.

In considering the value of tuberculin as a diagnostic agent there are several queries which suggest themselves:

First, Is its use necessary?

Second, Is it safe to use tuberculin for this purpose?

Third, Is the test sufficiently accurate to be of clinical value?

In reply to the first question many diagnosticians say "No." Drs. Bartlett and Snader inform me that in their experience there have been few cases in which they have not been able to arrive at a correct diagnosis by a careful study of the clinical history associated with a thorough physical examination. Latham, Babcock and other authorities of the old school fully concur in this view. On the other hand, there are two undeniable facts which lead me to feel that there is still a great field of usefulness for tuberculin in the early diagnosis of phthisis. The first of these is the well recognized fact that the vast majority of cases of pulmonary tuberculosis are not diagnosed by physicians until they have passed the first stage of the disease. In

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fact, I regret to say that many medical practitioners fail to arrive at a correct diagnosis any earlier than the patient and his friends. But it is not only the unskilled or the negligent that fall into error in the matter of early diagnosis. Sometimes the most painstaking and thorough examination fails to reveal the true nature of the case. Let me illustrate my point. Some months ago a lady consulted me whom I found to be in the last stage of pulmonary tuberculosis. Three years prior to that time she had had an attack of hæmoptysis. Being alarmed by this event she consulted two of the most eminent diagnosticians in New York City. Both pronounced her lungs to be in perfect condition, and assured her that there were no signs of tuberculosis. Within six months she developed a cough, followed by emaciation and hæmorrhages, and in spite of all treatment she died in a little over three years after the first hæmorrhage. This is only one case out of many similar ones that have come under my observation, and I have no doubt every physician here has had the same experience.

The second fact bearing on this question which we must consider is the development of the tubercular process in the lungs. The primary lesion in the ordinary chronic case of pulmonary tuberculosis does not begin with a gross pahological lesion, but as minute miliary tubercles. The development of this process is gradual, and several weeks, or even months in most cases, elapse before there is sufficient alteration in the structure of the lung to give rise to any perceptible change in the physical signs as determined by percussion or auscultation. This is especially true if the lesion is deep-seated. To rely on subjective symptoms alone in this stage when they are vague and indefinite would lead one to innumerable errors. It is in this class of cases, therefore, where the physical signs are absent or doubtful, and where no tubercle bacilli can be found in the sputum, that I believe injections of tuberculin are not only helpful, but indeed necessary, if we are to arrive at an early diagnosis.

Is it safe to use tuberculin for diagnostic purposes? As a routine measure to be applied without discrimination in all cases of tuberculosis or of suspected tuberculosis which present themselves to us I would say no, most emphatically no. As a special means of diag-

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nosis in suitable cases when given under proper precautions it is the most valuable diagnostic test at our command. Latham states, and his opinion is concurred in by Osler, that it is absolutely free from danger, and that there is no case on record in which it has been proved that bad results have followed the injection of this substance when made under suitable conditions.

Is the test sufficiently accurate to be of clinical value?

In answering this question we must inquire first whether the reaction occurs in any other disease except tuberculosis, and secondly, whether there is always a reaction to tuberculin when tuberculosis is actually present. It seems to be pretty clearly demonstrated that patients suffering from leprosy give a positive reaction to tuberculin. There is a strong probability that a reaction may occur in syphilitic cases. It has never been proven that the reaction occurs in any other disease. Koch declared, after an investigation of three thousand cases, that the reaction was practically absolute. The results from its use in cattle strongly confirm this view.

As to whether a reaction always occurs in tubercular patients there is some difference of opinion. It is well known that no reaction may follow the injection of tuberculin in cattle suffering from tuberculosis accompanied with a high fever. This is probably due to the fact that the body is already saturated with the toxins of the disease. There have been a few cases reported in which there was no reaction, although post mortem examinations showed the patients to be tubercular. All writers agree, however, that such cases are very rare, and the test may be considered quite as reliable as the Widal test for typhoid fever.

Having given my reasons for believing tuberculin to be a useful and safe diagnostic agent, and one that is sufficiently accurate to be of clinical value, we will next consider in what class of cases its use is advisable. *The use of tuberculin should be restricted to those cases of tuberculosis which are in their incipient stage and in which the clinical history and physical signs are inconclusive.* It is positively contraindicated in febrile cases, in those with extensive lung involvement or with secondary infection.

In making the tuberculin test I have used the following method: The patient's temperature is taken every three hours for three days

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prior to the injection in order to determine whether there is any variation in temperature. At the end of the third day, preferably in the evening, the first injection is given. It is important to remember that for diagnostic purposes we employ Koch's "old" tuberculin. The crude tuberculin is diluted with 0.5 per cent. solution of carbolic acid until a one per cent. solution is obtained. This solution will only keep a few days. At the first injection it is best to give 0.001 c. c. of crude tuberculin for an adult and half this dose for children. The reaction usually occurs within twenty-four hours. During this period it is necessary to take the temperature every two hours. A reaction is evinced by a rise of temperature of from 1 to 2 degrees and by the presence of constitutional symptoms such as aching in the back, headache and gastric disturbance. In some cases fine moist rales will be heard around the seat of the lesion. If no reaction follows the first injection we should wait three days and then inject 0.002 c. c. If there is still no reaction we inject 0.005 c. c. at the end of three more days. If there is no reaction from this dose we may conclude that the patient is free from tuberculosis. A positive reaction is of more value than a negative one.

THE THERAPEUTIC USES OF TUBERCULIN.

During the last five years with the employment of small doses and with a better understanding of the class of cases in which tuberculin exerts a remedial influence very encouraging results have been reported from its use by many authorities at home and abroad. Trudeau, who had more experience with its use than any other writer in this country, recently reported that he found it a valuable adjunct to the fresh air treatment in inactive or slowly progressing cases. Pottinger in a valuable pamphlet, entitled "A Critical Study of Tuberculin and Allied Products, Based Upon a Collective Investigation," states that "Basing an opinion on 1,200 first stage cases, six of which were treated in sanitoria by the usual hygienic and dietetic methods, and 589 by the same careful management plus tuberculin or an allied substance, we find that of those treated in the latter manner, 20.2 per cent. more were cured than where tuberculin preparations were omitted from treatment." The figures he gives coincide with those of most conservative writers on this subject.

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Tuberculin is indicated as a therapeutic agent in incipient or slowly progressive cases of pulmonary tuberculosis in which the temperature does not exceed 100° F., and in which there is no systemic infection. It is contraindicated in cases with systemic infection or rapidly advancing disease with high temperature.

There are two methods of administering tuberculin for therapeutic purposes, the opsonic index method and the clinical method. I mention the first only to say that it is useless and impractical as now employed. The clinical method is safer and more suitable for general use. For therapeutic purposes Koch's "new" tuberculin is usually employed, as it is capable of producing antibacterial immunity, while "old" tuberculin is only capable of producing antitoxic immunity. The dose is always measured and expressed in fractions of a milligramme of solid substance. The treatment should be begun with the injection of 1-10,000 of a milligramme. If no reaction follows this the dose should be gradually increased, always avoiding any marked constitutional disturbance. If too large doses are used at first a hypersusceptibility is produced which renders it exceedingly difficult to produce any degree of immunity. If the smaller doses cause no reaction the dose is very gradually increased until we get slight evidence of a reaction. The dose is then reduced to half of the amount that caused the reaction and gradually raised again. In favorable cases we find the tolerance to tuberculin is in this way gradually increased. We should, however, never raise the dose above 1-20 milligramme. The injections may be made every five to seven days, but should be omitted if the patient shows any rise in temperature or other signs of an exacerbation of the disease. If there is no improvement by the end of three months the treatment should be discontinued. If the results are favorable the injections should be kept up for six to twelve months. The immunity resulting from this treatment is produced only very gradually, and attempts to hasten it by increasing the dose rapidly or by shortening the intervals is likely to give rise to a marked reaction followed by intolerance for the remedy.

Tuberculin has been used quite extensively by homœopathic physicians in potentized form for a number of years. My own experience with this remedy administered by mouth has been very limited.

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All experimenters are agreed that like all other proteid poisons, tuberculin is destroyed by the secretions of the stomaih. I am. therefore, a strong advocate of the hypodermic use of tuberculin in whatever form it may be used. Those who have employed the remedy in potency state that its characteristic indication is a desire for cool air. In many respects the symptoms are similar to those of pulsatilla. The patient is always worse at night. There is hectic fever with sweats which are always worse when the patient is confined to a warm room. The patient wants to be where the air can blow over him. There is nothing characteristic about the cough which is usually accompanied with yellow or greenish expectoration. Loss of appetite and emaciation are frequently present. The remedy is usually employed in the 200 potency.

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REPORT OF THE

SECTION OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

Bacteriology of the Conjunctiva, by W. W. Blair, M. D.
Ocular Manifestations of Albuminuria, by H. B. Bryson, M. D.
Pharyngo-Mycosis, by H. F. Schantz, M. D.

BACTERIOLOGY OF THE CONJUNCTIVA.

W. W. BLAIR, M. D., PITTSBURG.

Bacteriology had scarcely become established as a branch of modern medical science when its teachings were applied to the investigation of the conditions obtaining in both the normal and in the diseased *conjunctiva.*

A knowledge of the bacteria to be found in the various *diseased* conditions of the conjunctiva is necessary because of its relation to diagnosis, prognosis and treatment, while a clear understanding of just what forms of bacterial life may be looked for in the healthy conjunctival sac has its bearing upon questions of ophthalmic surgery.

To consider these two questions in reverse order, I will first discuss briefly the Normal conjunctival sac and its Bacterial contents.

The conjunctiva, with its surface kept continually moist by tears, its warmth, its exposed situation and its close association with the nasal passages, furnishes, as can be readily understood, a most favorable situation for the development of microbic life.

That the conjunctiva does frequently harbor germs, both harmless and pathogenic, is fully attested by the carefully tabulated results of the researches of Sattler, Fick, Koch, Weeks, Axenfeld, Morax, McKee and Eyre; the latter found in the examination of 150 Conjunctivæ, 75 to be sterile.

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McKee, of the Royal Victoria Hospital, in Montreal, reports 40 sterile Conjunctivæ in a series of 140 examined. My own hitherto unpublished series of cases showed 9 sterile Conjunctivæ in 50 examined, while Fick, of Zurich, has almost the same result, *i. e.*, 6 only were sterile in a series of 49 examinations.

One of the most recent researches in the line is that reported by McKee, of Montreal, whose results may be taken as fairly representative.

In the 100 cases in which positive results were obtained,

Staphylococcus pyogenes albus	48 times
Staphylococcus epidermis albus	9 times
Staphylococcus pyogenes aureus	2 times
Streptococcus pyogenes	16 times
Bacillus Xerosis	42 times
Bacillus of Diphtheria group	1 time
Sarcina lutea	1 time

My own investigations, carried out two years ago, gave proportionately the same results, showing the Staphylococcus to be the most frequently present, and the xerosis next in order of frequency.

The method followed by McKee and myself was that outlined by Eyre, and is as follows: The lower lid is drawn away from the eye ball and the palpebral conjunctiva gently stroked with a sterile platinum loop; this provokes an increased flow of the lachrymal secretion which collects in a little pool at the inner canthus; a loopful of the lachrymal secretion is picked up at this point and carried into a tube of suitable culture media, such as Agar Bouillon or Serum Agar, which tube is then placed in the incubator for twenty-four hours, when it is examined for bacterial growths, and these, when any are found, are suitably stained and examined under an oil immersion lens.

By a comparison of all the published results of different investigators in this line it will be readily seen, first, that the conjunctival sac more or less constantly contains micro-oragnisms which may or may not be harmful. Second, that the conjunctival sac *frequently* contains pus-producing organisms.

Third, that the lachrymal secretion, one of the offices of which is to flush the conjunctival sac, usually carries organisms in great number, also that this secretion has a decided germicidal action

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upon many of the bacteria which are met with in the conjunctival sac; the latter statement has been proven by many observers, including my own research in this line in 1904 in the Augenklinik at Freiburg and published by the courtesy of Prof. Axenfeld in the reports of that clinic.

The bearing of these findings is naturally more upon Ophthalmology in its surgical aspects than upon the *treatment* of eye diseases.

Having now briefly considered the normal conjunctiva with reference to its usual bacterial contents, I will take up the consideration of some of the more common forms of conjunctivitis with especial reference to the specific causative germ in the several well-defined forms of conjunctival disease.

Conjunctivitis in its various forms makes up a large percentage of the routine practice of the Ophthalmologist, but is also one of the forms of eye disease most frequently treated by the general practitioner, in fact, in many instances, he may treat it, so that my calling your attention to the latest teachings on the subject may not be out of place in a meeting of this kind.

Along with the earlier researches into the Bacteriology of the normal conjunctiva there were also some efforts made to discover, if possible, a causative germ in the various forms of *Conjunctivitis*, especially in the apparently contagious varieties.

And this, I think you will agree with me, is in keeping with the trend of all medical studies of to-day, which makes *etiology* the starting point of the diagnosis, and all study of disease, as being absolutely essential to any intelligent treatment of the same. As a matter of fact, the routine examination of the discharge from a diseased conjunctiva is a comparatively simple procedure and we can therefrom gain knowledge of paramount interest and importance.

From intelligently conducted examinations as referred to, we have now come to classifying conjunctival disorders into two grand groups according to whether the ætiological factor is, or is not, a micro-organism.

Into the first group, having no known micro-organism, may be placed all those forms of conjunctival irritation or inflammation which we know to be reflex or secondary to causes like the following: Exposure to strong wind, dust, gases or strong light, errors of refraction, over use of the eyes, rhinitis, trichiasis, alco-

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holism, etc., and into group No. 2, we place those cases arising from the invasion of a specific germ, those most commonly found being:

Bacillus of Koch-Weeks.
Diplo-bacillus of Morax-Axenfeld.
Pneumococcus,
Gonococcus.
Bacillus Xerosis.
Staphylococcus.
Streptococcus.
Bacillus influenza.
And Micrococcus catarrhalis.

That the sub-division of the different forms of conjunctivitis as above described, is a rational one and a step in the right direction I think you will all agree, though the proper carrying out of the same involves some labor and pains; though the methods are not intricate but quite within the reach of any one at all familiar with laboratory methods.

The proper study of a conjunctival discharge means the staining of smears on slides and the inoculation of suitable culture media.

The making of a proper smear is best done by means of the sterile platinum loop—by means of it a goodly quantity of the discharge is transferred to a clean glass slide and carefully spread out to the thinnest possible film, when it is stained by any of the well-established methods, that of Gram having been in my hands the most serviceable; it is quick, sure and easily carried out; the fact of its being a double stain is particularly helpful.

For the benefit of those who are not familiar with the procedure, I will here outline the method as followed in the laboratory of Professor Axenfeld, in the University eye clinic at Freiburg.

A smear is well spread out and then dried quickly by passing three times through the Bunsen flame, then apply Anilin Gentian Violet 25 seconds, wash with water, then fix with Gram's Iodine 15 seconds; then wash with alcohol until no blue comes away, wash with water. Counterstain with Safranin 5 seconds, dry and examine under an oil immersion lens.

With regard to the culture media there is no difficulty in growing most of the organisms to be met with in the conjunctiva—Agar Bouillon, Blood Agar and Ascitic Agar ordinarily sufficing—the in-

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oculations to be kept in the incubator from 24 to 48 hours at the body temperature.

During the past few years the results of various workers in this line, have been tabulated, in an efford to determine the relative frequency of the different forms of conjunctival infection, with the result that in varying localities *different* organisms appeared to be most active. A few of these tables I will give you, though my own opinion is that with the development of a more nearly perfect routine, and a more general adoption of the same, the difference will not be so marked.

In the clinic of Prof. Axenfeld, at the University of Freiburg, there were examined, between 1902 and 1905, nine hundred cases of acute and chronic conjunctivitis, and the tabulation showed as follows:

Morax-Axenfeld	519 cases
Koch-Weeks	41 cases
Pneumococcus	34 cases
Gonococcus	12 cases
Loeffler's Bacillus	6 cases
Streptococcus	5 cases
Friedlander's Bacillus	2 cases
Pfeeffer's Bacillus	3 cases

Gonin, in Switzerland, in 310 cases of Catarrhal Conjunctivitis shows the following tabulation:

Morax-Axenfeld	185 cases
Koch-Weeks	10 cases
Pneumococcus	10 cases
Streptococcus	5 cases
Staphylococcus	83 cases

Pollock, in Glasgow, in 361 cases showed the following in 359 cases:

Koch-Weeks	189 cases
Morax-Axenfeld	62 cases
Pneumococcus	9 cases
Gonococcus	17 cases
Mixed infections	20 cases
Negative	62 cases

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Morax, in Paris, reports the following in 596 cases:

Koch-Weeks	175 cases
Morax-Axenfeld	258 cases
Gonococcus	121 cases
Pneumococcus	18 cases
Influenza	6 cases
Loeffler's Bacillus	2 cases
Staphylococcus	6 cases
Unknown	10 cases

Hanford McKee, at the Montreal General Hospital, reports 500 cases with the following analysis:

Morax-Axenfeld	200 cases
Pneumococcus	13 cases
Gonococcus	10 cases
Koch-Weeks	7 cases
Influenza	3 cases
Memugococcus	1 case
McKee's Bacillus	9 cases
Micrococcus Catarrhalis	12 cases
Streptococcus	24 cases
Staphylococcus	50 cases
B. Coli	5 cases
Xerosis Bacillus, Heffman's Bacillus	102 cases
Saprophytes	102 cases
Negative	64 cases

I will not weary you further with figures, but from the foregoing it will readily be seen that the experience of most of the observers shows the Morax-Axenfeld, the Koch-Weeks and the Pneumococcus to be the varieties most commonly met with, though taking the different localities, we do not find that the several forms of infection bear a fixed relation to each other, as regards their relative frequency; thus in Germany and in France the most frequent infection is the Morax-Axenfeld; in New York, the Koch-Weeks; in Washington and in Nebraska, the Pneumococcus. Referring to my remarks at the outset, I would repeat that, in the handling of all forms of Conjunctivitis, the correct diagnosis is all important—first, because in the varying forms we recognize divers evil tendencies thus the Pneumococcus Conjunctivitis tends to develop Iritis—the

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Morax-Axenfeld Corneal ulcer, etc., all of which complications when expected, may be warded off, or at least recognized with a promptitude which may make all the difference between a successful or an unsuccessful outcome to the attack.

Further, as to the local theraphy, it is now known that, whereas the Koch-Weeks infection yields promptly and readily to silver salts, they are futile when applied to the Morax-Axenfeld conjunctivitis; while the latter, in turn, yields with invariable celerity to the application of the different preparations of zinc.

It will be seen from this brief review that much has been done to establish the treatment of conjunctival affections upon a scientific basis, and I am glad to be able to note that these studies which were so long left to our fellow-workers in other lands are now being intelligently carried out here.

OCULAR MANIFESTATIONS OF ALBUMINURIA.

H. B. BRYSON, M. D., PITTSBURG.

From a practical and therapeutic standpoint I am writing on a subject that concerns the general practitioner more than it does the ophthalmologist. In fact, the interest of the ophthalmologist in the ocular manifestations of albuminuria is an almost purely academic or scientific one; he does not attempt the therapeutic or surgical management of these cases, that is left to the general practitioner who treats the underlying constitutional disease, of which the manifestations here considered are but the more or less inconstant symptoms or sequelæ.

There is nothing new in this paper, it is a collation and presentation for the benefit of the general practitioner of some of the observations made and data gathered by ophthalmologists, such general facts as, having a bearing on the etiology, pathology, occurrence and prognosis, may assist him the better to comprehend the course and significance of these ocular symptoms of albuminuria when he encounters them. Into the details of pathological anatomy and the minutiæ of ophthalmoscopic findings, by means of which the ophthalmologist differentiates many types of retinitis, optic neuritis and neuro-retinitis, this paper will not enter.

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It is about one century, so far as we know, since general practitioners began to note disturbances of vision concurrent with the existence of dropsy, notably that at times occurring in pregnancy, the puerperium, and in that sequent to scarlatina. In 1827 Bright did his great work in renal pathology at Guy's Hospital, demonstrated the presence of albumen in the urine in these dropsical cases, and laid the foundation which later established the causal relationship between the renal disease and the complete or partial loss of vision at times observed in these cases. Later (1835) Bright published his "Clinical Reports," in which he, Barlow and other co-workers reported cases of amblyopia and amaurosis co-existing with albuminuria. Among these cases were four of total blindness in thirty-seven cases of albuminuria. These "Reports" so stimulated observation that from 1835 to 1840 several authors published similar cases, and strange to say, Laudouzy (1849) not stimulated by these "Reports," but apparently working without knowledge of Bright's investigations, made the independent discovery that loss of sight sometimes co-existed with albuminuria. All of these observers simply recognized the causal existence, but did not suspect the causal relationship of the visual disturbance and the renal disease, nor did they attempt to explain just how the visual loss was affected. Similar observations were continued until 1850, when Turck, by examining microscopically a retina removed post mortem from a case of Bright's disease, in which loss of vision had been a concurrent phenomenon, discovered and gave the earliest description of the histological changes in albuminuric retinitis, thus accounting for the manner in which the visual loss is effected, but not giving a cause for the retinal lesions discovered. Turck's discovery was soon confirmed by others—Heyman, Zenker, and Virchow,—the latter two adding much to the knowledge of the pathological changes which Turck had discovered. Then, in 1851, came the invention of the ophthalmoscope, and with it the opportunity to examine the intraocular changes in these cases, in the living subject, and it is to Liebreich, who, writing in 1859, that we must give the credit for the first detailed description of the ophthalmoscopic appearances in cases of amblyopia or amaurosis co-existing with albuminuria. All of this work had been done before the theory was advanced that the kidney

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disease was the exciting cause of the retinal lesions, and consequent visual loss; but Von Graefe and Leber, and they were the first to do so, soon advanced the etiological theory now most commonly held by ophthalmologists, viz., that the uræmic condition of the blood, superinduced by the albuminuria, is the direct cause of the ocular manifestations accompanying albuminuria, that the relationship between the visual disturbances observed, and the kidney disease is a causal and not a casual one. Since those early days modern investigation has considerably widened the range of the ocular manifestations of albuminuria, as well as established the causal relationship, until now we have as such iritis, paralysis of external ocular muscles, cataract, detachment of retina, choroiditis, amaurosis and retinitis. Of these, iritis is extremely rare; there are but few recorded cases of paralysis of external ocular muscles; cataract, while not rarely co-existing with albuminuria, is not proven to be a causal manifestation, as it is not more frequent in albuminuric than in other patients; detachment of the retina is perhaps not so rare as we think, and is more likely a sequel of retinitis than a primary result of the kidney disease; choroiditis is a common manifestation, but usually is concurrent with retinitis. Amaurosis and retinitis are by far the more common and more important manifestations of albuminuria, and these only will be further considered in this paper.

URÆMIC AMAUROSIS.

By the term uræmic amaurosis we understand that complete though transitory loss of vision without retinal lesion at times complicating some cases of albuminuria. It is probably the most remarkable of that group of cerebral symptoms which constitute the acute manifestations of the uræmia resulting from albuminuria.

(1) Cause. The theory of the causation of uræmic amaurosis is still one of the mooted etiological questions. Virchow, in 1856, after Turck had established the fact that the loss of vision in the retinitis attending albuminuria was immediately due to pathological lesions in the retina, advanced the now disproved view that uræmic blindness was also due to gross pathological changes in the retina. Pathological anatomists have as yet been unable to discover any

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retinal lesions in cases of amaurosis, and it is the rarest exception that ophthalmoscopic examination reveals anything abnormal in these cases, and then probably only in cases in which there has been an antecedent retinitis. These facts argue that the cause of this form of blindness must be sought for at a point higher up in the visual system than in its terminal expansion, the retina. And to-day, it may be asserted, in general terms, that uræmic amaurosis is caused by the toxic action on the cortical visual centres of matter with which the blood has become supersaturated on account of defective elimination by the kidneys. Yet to-day we are in the dark as to whether this toxæmia be due to one toxin or to many, and as yet the toxin has been neither isolated nor chemically identified. But it cannot be positively asserted that the cortical origin of uræmic amaurosis is fully established, for, as bearing upon this point, we have the irregular response of the pupil to the light stimulus. In the majority of cases of amaurosis the pupil is moderately dilated, sometimes normal in size, and reacts well on exposure to light. This retention of pupillary reaction, while complete blindness exists, means that the toxic effect of the uræmia has been centered on some part of the visual system higher up than the corpora quadrigemina. But in a small number of cases we find the pupils widely dilated, and the light reflex wholly lost. This means that the action of the poison may have been upon both central and peripheral parts of the visual system, or on the peripheral parts—optic tract and nerve—only.

(2) Occurrence. Uræmic blindness is most common in cases of acute albuminuria, the parenchymatous type of this disease, which is induced by scarlet fever, and by pregnancy, especially in primiparæ. This recalls a remarkable fact, viz., that amaurosis seldom occurs in persons advanced in years, which possibly argues that the cerebral centres of elderly people are less susceptible to the uræmic toxin or toxins. You will also find amaurosis occurring in some cases of small-pox, and other acute exanthemata, but with less frequency; it occasionally results from exposure to cold, and supervenes in rare cases of chronic Bright's disease, interrupted by an acute exacerbation.

(3) Prognosis. While amaurosis is to the physician probably the most remarkable, and to the patient the most alarming ocular

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manifestation of albuminuria, the prognosis, as regards recovery of vision, is better than in any other ocular disturbance whose etiology is traceable to albuminuric nephritis. In general, we may say that the outlook for complete recovery of vision is good, that relief of the general uræmia, by constitutional or surgical treatment, usually results in rapid, it may be even a sudden restoration of normal vision. This result may be expected within from twelve to twenty-four hours from the onset of the blindness, but occasionally is delayed to from forty-eight to seventy-two hours. If the return of vision be delayed beyond this period, or if there be recurrent attacks of blindness, the prognosis is much less favorable, and permanent visual depreciation with contraction of the field of vision may result.

RETINITIS.

(1) Occurrence. While retinitis accompanying albuminuria is not uncommon in children and adolescents, the age of the patient seems to have no bearing on the occurrence of the ocular lesion. The large majority of cases occur in patients over forty years of age, but simply because chronic interstitial nephritis is more common after that age.

The definite time during the progress of the renal disease, when the retinal manifestation appears, has not so far been determined; but it is fairly well proven that the retinal changes never appear prior to the underlying kidney disease,—or, in other words, that the retinal lesions never appear as the initial evidence or prodroma of albuminuria, as was formerly supposed; and the sending of your patient to an oculist, thinking he may be able to detect for you in the fundus oculi the first evidence of suspected albuminuria, is without good basis in fact. It is, however, true that retinal lesions may become manifest in cases of granular kidney disease, but not showing albuminuria at the time of the appearance of the retinitis. Such are exceptional cases, and must be those in which the albumen is present intermittently, or does not appear until a very late stage of the kidney disease. In many cases, the appearance of the retinitis is coincident with the stage of cardiac hypertrophy; and it was this association which, by its frequency, led Traube to assert that it was the cardiac hypertrophy, and not the main kidney disease, which was

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directly the cause of the retinal disturbance. But the association of these conditions is inconstant; and, when so occurring, they are doubtless unrelated to each other as cause and effect, but both independently the result of protracted kidney disease.

(2) Frequency. Most authorities assert that retinitis is essentially a manifestation of chronic renal disease of long standing,—such cases as were primarily chronic, or such cases as, having been acute, have passed into the chronic stages; yet some writers note the occurrence of retinitis in certain forms of acute nephritis, especially that at times accompanying scarlatina, pregnancy and childbirth; less frequently in variola, measles, erysipelas, typhus, diphtheria, and in lead and cantharis intoxication. Albuminuric retinitis, however, occurs most frequently in chronic interstitial nephritis, *i. e.*, the contracted granular or atrophic kidney; it is not rare in cases of chronic tubal nephritis, *i. e.*, large white kidney; but is rarely found in cases of lardaceous nephritis, and then probably when same has reached the stage of atrophy. As to frequency with which you may expect to find retinitis in your cases of albuminuria, the statistics vary rather widely. Laudouzy went so far as to say that retinitis is a manifestation of most cases of albuminuria, but this has long since been proved to be by far too liberal an estimate. Eales, among 100 hospital cases of Bright's disease, found 28 per cent. with retinitis; Wadsworth, among 90 unselected cases, found retinitis in 13 per cent.: Leroche gives the percentage of his experience as 21; Lebert, 20; Schweigger, 6 to 7; Bright and Barlow, 10; Frerichs and Miles, 13; Wagner, 9; Galezowski, 33. The percentage with these nine observers ranges from the 7 per cent., of Schweigger to the 33 per cent. of Galezowski, and gives an average of 17 per cent. for the nine observers.

(2) Pathology. In the pathogenesis of retinitis albuminurica, the initial and most important step seems to be the development of an arteritis in all of the blood-vessels of the eye, with thickening of the vascular walls by proliferation and fatty degeneration, and so reducing the lumen of the vessels. This narrowing of the vascular calibre retards the blood current, and so keeps the toxic matter in the blood longer in contact with the vessel walls, thus augmenting the disease condition. This arteritic process is most noticeable in the arteries, and especially the smaller ones,—the veins being un-

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altered in size,—whose lumen may be reduced to one-half the normal size, or less; the narrowing is irregular, *i. e.*, an artery may be much reduced in calibre for a short distance, then normal for a short distance, or even dilated, resulting in an unusual amount of tortuosity, and further retarding the blood current. This arteritis which appears first in the choroid, where it is more severe than in the retina, is sclerotic in character; is identical with that previously existing in the kidneys and spreading to the general circulatory system, and explains all other following degenerative lesions and hæmorrhages seen on ophthalmoscopic examination. Owing to these vascular changes, an ophthalmoscopic examination will show the central light streak of the arteries, especially the smaller ones, to be lighter than in normal cases,—so bright as to suggest the name of "silver wire arteries." There is also a loss of translucency in the arteries,—an underlying vein being hidden. In retinitis albuminurica, the retinal degeneration is confined to the posterior pole of the fundus, and a surrounding region of 4 to 5 papilla breadths; it rarely reaches the equator of the retina, and never the ora servata. The pathological damage done to the retina in albuminuric retinitis bears no fixed relation to the severity of the renal disease, nor to the amount of albumen in the urine, as the retinitis may improve while the kidney lesion grows worse, or vice versa.

In a well established case of albuminuric retinitis, the pathologic lesions in the retina will, on ophthalmoscopic examination, show about as follows: Optic nerve head reddish, swollen, opaque, and with outlines indistinct or even obliterated; grouped around the optic disk, and somewhat radially disposed, but wanting in the region of the macula, three things will attract attention, viz., (a) pure white or yellowish placques of fatty degeneration, varying in number and size; (b) hæmorrhages, mostly flame-like, and also varying in number and size; (c) small, shining, silvery point, being degenerated nerve fibers; the same features will be found grouped around the macula forming a pretty stellate figure,—the stellar arrangement is not always complete.

(3) Prognosis. The prognosis in cases of neuro-retinitis accompanying albuminuria has a dual outlook, first, as to the patient's vision, and second as to his life. As soon as this ocular affection is recognized, you may know that the prognosis is serious as to

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vision, and grave as to life. As to the vision the prognosis is best in those cases of retinitis accompanying acute albuminuria, as in scarlatina, pregnancy, childbirth, lead poisoning; in such cases improvement and even restoration of vision may be expected if the underlying causal disease be improved or cured. But in the purely nephritic and chronic forms of albuminuric retinitis, improvement in or restoration of vision, is extremely rare,—more rare than the cure of the primary kidney lesion; yet, at times, some improvement of vision will manifest itself during the course of the kidney disease, but such improvement is not permanent, and must not be so interpreted, nor must it be taken to indicate an improvement in the kidney disease itself. Too, it must be borne in mind that the visual disturbance in these cases is variable, is not in proportion to the ophthalmoscopic findings, nor to the state of the kidney disease at any given time. But, however bad, the prognosis as to vision, it might be worse, as total blindness seldom, if ever, results from the retinitis accompanying albuminuria. But, to the general practitioner, as well as to his patient, it is the prognosis as to life that, in these cases, is of greater importance. On this phase of the subject many observations have been made and statistics collected by ophthalmologists as Possauer, Zimmerman, Bull, Miley and Trousseau, a knowledge of which, better than any other single manifestation of albuminuria, will enable him to prognose most definitely his patient's vital expectancy. These observations and statistics show that in all cases of albuminuria, aside from those due to an acute nephritis, as in pregnancy, scarlatina, poisoning, etc., the onset of retinal changes is a certain indication of an early termination of life within a few months or years,—the latitude being due to the severity of the renal disease, and to the patient's environment. These statistics upon which the prognosis as to life is based show that, considering all cases together, other than those excluded as above, from 70 per cent. to 80 per cent. die within one year from the manifestation of the retinal disease; and more than 90 per cent. within two years. The lesson taught by the statistics referred to may be fairly summarized by considering those of Baroness Possauer, who, from 67,000 albuminuric cases attending Zurich clinic, and from the private clientele of Prof. Haab, has collected those having retinal complications. Her work shows that, among men of the poorer class attend-

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ing this clinic, the death rate within two years after the onset of renal neuro-retinitis, in some form, was 100 per cent.; among women of the same class it was 68 per cent. Among such of Prof. Haab's private patients as were possessed of means, and similarly affected, the death rate within two years was, for men, 59 per cent.; and for women, 53 per cent. The longest period of life among the private cases was eleven years; among the clinical, six years; but we are not told how many lasted this long. These results will not be considered surprising when we remember that retinitis albuminurica almost always occurs after the causative renal disease has reachd an almost hopeless stage.

In cases of retinitis at times complicating the albuminuria of pregnancy, the prognosis, while grave, is vastly better, both as to vision and life. As bearing on the vision, we have statistics of Culbertson, as given in the American Journal of Ophthalmology, 1894. These show: Recovery of normal vision, 16 per cent.; recovery of partial vision, 58 per cent.; blindness, 25 per cent. Silex (1895) reported twenty-six cases which he had been able to observe; of these eleven had vision better than one-sixth; ten recovered vision less than one-sixth; five, almost blind. The prognosis as to life, when retinitis supervenes in these pregnancy cases, being very grave, the question of the artificial induction of labor will arise. In some cases, of course, this question arises and is decided without reference to any retinal involvement; but in others the onset of retinitis precipitates the question and materially assists in its decision. In several published cases in which retinitis was severe artificial termination of pregnancy was followed by very marked visual improvement. Silex advises premature delivery in nearly all cases complicated with retinitis. Snell counsels the same procedure when the retinal manifestation is severe.

PHARYNGO-MYCOSIS.

HENRY F. SCHANTZ, A. M., M. D., READING.

Among the older writers this condition must have been classed with the cases of follicular pharyngitis, for previous to Fraenkel's

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description in 1873 it was not noted as a separate and distinct condition. It had for a number of years been classed as a rare disease, but now it is seen by those who make it a rule to examine the throats of patients, I can hardly call it frequently but occasionally..

In a hurried examination it may be mistaken for a case of follicular pharyngitis. My object in presenting this subject is to call attention to the difference in the appearance of the throat in this condition as compared with pharyngitis and diphtheria.

The patient complains of very few symptoms beyond the slight sensation of fulness in the throat or possibly the occasional tendency to huskiness. There are no decided painful symptoms connected with the condition.

The whitish or yellowish exudate is raised above the level of the surface of the mucous membrane, and is located without the lacuna of the tonsil not within, nor are the collections depressed as in tonsillar concretions.

To verify the diagnosis the microscope shows the leptothrix buccalis spores among the epithelial scales.

Therapeutically, the condition does not respond to the usual remedies for pharyngeal diseases. The mercuries, hepar sulphuris calcareum, ferrum phos., phylocacca and the other well indicated remedies in throat conditions have little or no effect on these throats.

Local applications of the mild alkaline class are of like effect. The fungi require more powerfully destructive methods. The forcible removal of the exudate and the destruction of the seat of growth by the use of the electric cautery give the best results. In the absence of this means chromic acid destroys the site of the growth.

The teeth, which are a source of irritation if decayed, must be attended to, and if the patient suffers with any disturbance of the digestive function that must also receive the indicated treatment.

I believe that the condition is more commonly seen than it is recognized, and that many of the slowly improved cases of so-called chronic follicular pharyngitis are nothing other than pharyngomycosis.

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REPORT OF THE

SECTION OF OBSTETRICS.

SYMPOSIUM ON THE PROCREATION OF CHILDREN.

The Prospective Parents, by W. G. Dietz, M. D.
The Assistance We can Give a Case of Labor, by W. C. Mercer, M. D.
A Departure From the Traditional Method of Delivery in the Second Stage of Labor, by C. C. Rinehart, M. D.
The New-Born Child, by F. W. Boyer, M. D.
The Technique and Duties of the Parturient Nurse, by D. W. Straub, M. D.
Gestative Conditions Eventuating in Eclampsia, by W. A. Haman, M. D.

THE PROSPECTIVE PARENTS.

WM. G. DIETZ, M. D., HAZLETON.

Biology teaches and experience proves, that the individual is the resultant of the potential energies of his progenitors and contains within him all the characteristics of the latter. The fact that these qualities are not always demonstrated as apparent, does in no wise disprove the truth of the statement. Again, the individual may present traits or peculiarities not possessed by either of his or her parents but which are known to have existed in preceding generations.

Neither time nor the scope of this paper permit to enter upon a discussion of the subject from a biological standpoint, but simply to view it as it is met with in practice.

It is a regrettable fact that parents are become such rarely prospectively. The time when a large family was the rule, is fast passing, certainly so in a direct ratio to civilization and culture, whether applied to the individual or the nation. Can it be denied that a large percentage of the children born today from parents of

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Anglo-Saxon or Gæelic descent are the result of accident rather than that of premeditated purpose?

What are the reasons for this unwillingness to pay the debt to humanity by insuring its perpetuity? That the social and economic conditions of today are a powerful factor with the thoughful and intelligent partisans of the middle classes cannot be denied, nevertheless the unwillingness, if not absolute aversion, of many women of to-day to take upon themselves the duties and responsibilities of motherhood, is probably the greatest reason that lies at the root of the matter. But let us turn from this obverse picture to take a more altruistic view—the prospective parents—man and woman united in wedlock, having for its highest and noblest purpose and ideal the bringing forth of the child which shall enfold within all the potentialities of the highest, noblest and best that is in man. It is an irrefutable postulate, that such can only be looked for and expected, provided the prospective parents, or, to some extent, their ancestors, are or have been the possessors of these qualities themselves. It must, however, be understood that the individual as such does not always and under all circumstances, fulfill these promises.

Far from it. Circumstances, environment and conditions of life, especially during the early, formative period of existence, furnish powerful factors in the development or suppression of these latent energies, but these are irrelevant to the subject under consideration. The latter is a vast one and can only in part and but superficially be touched upon in a paper of this kind.

Man in his mental, moral and physical aspect is potent to perpetuate potentialities to his offspring. These may be constitutional —present and operative at all times—or only incidental, that is, only temporarily active, as for instance, when fecundation occurs during drunkenness.

Touching merely the more important states and morbid conditions which are especially liable to be conferred from parent to child, I shall mention first of all:

Insanity in its widest sense. That mental instability is frequently inherited, is practically admitted by all alienists. Especially is this the case in that form, known as Insanity of Puberty, and adolescence. In fact, no less an authority than Skoe regards hereditary predisposition as an indispensable factor. In connection with

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this, though not strictly belonging to that class who are actually insane, may be mentioned a large class of beings who are degraded mentally and physically, the degenerates who recklessly propagate a large percentage of idiots and criminals.

Epilepsy, has in heredity one of its principal causative factors. According to Dr. Allen McLane Hamilton, out of 980 cases of epilepsy, 435 presented some family history of neurotic or pulmonary trouble. It has been said, that children begotten in a state of drunkenness are apt to become epileptics.

Of no disease is heredity more surely established, than syphilis. That the disease may be propagated by a syphilitic father, without infecting the mother, appears to be established by reports from such authorities as Taylor and Hyde, in this country, and Kassawitz and others in Europe. Nevertheless, the danger in this case is decidedly less than where the reverse holds good. Constitutional syphilis as a cause of habitual abortion, is so well known that it needs only to be mentioned. Of those pregnancies which go on to full term, a large percentage result in still births or early death of the infant. It is said that of all who survive four months, one-third die before maturity, the remainder bearing the stigmata of the disease in a more or less marked manner.

The time-honored belief that tuberculosis can be transmitted from parent to child, has been rudely shaken during recent years of research in this disease. While, however, this latest dictum may be true as a scientific abstract, it nevertheless is a well proved fact that the children of tubercular parents inherit as a rule a constitution, the vulnerability of which forms an ever-ready nidus for the invasion of the tubercular bacillus.

Without going further into the enumeration of special diseased states, liable to the law of heredity, I will merely state that the children of neurasthenic parents, especially the mother, are as a rule of the same neurotic type and especially liable to neuralgic and choreic affections. Hemicrania is well known to exist in consecutive generations of the same family. The lithæmic constitution, due to faulty metabolism, appears also to be in evidence in different members of the same family and in consecutive generations. Rickets are said to occur more frequently in children whose mother has suffered from the disease in childhood. That heredity should play a

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role in the causation of carcinoma seems to be lacking of positive proof, though it is generally held by many of the laity. Diabetes is well known to occur in succeeding generations of the same family.

Alcoholismus. Of this Dr. A. Jaffray, a French physician, writing in the Revue Scientifique (Paris, July 13, 1907), under the title, "Unto the Third and Fourth Generation," makes this rather startling statement: "One cannot be with impunity the son of a drunkard." According to this writer alcoholismus is one of, if not the most important cause of creating the predispostion for the acquirement of other diseases, and this not only in the subject of alcoholismus itself but that this predispostion is propagated from parent to offspring, and consequently causing more harm and claiming more victims than tuberculosis.

That heredity plays part in certain physicial defects is evident from the following: Cleft palate, according to Lawson Tait, and also to the late Gordon Buck, is frequently seen as an hereditary lesion, and, according to Ferguson, inter-marriage is to be considered in this connection. A. Sidney Roberts and Samuel Ketels state that heredity forms an important element in the etiology of club-foot. The rate that heredity plays in deaf-mutism is shown by statistics. Out of 5,823 pupils admitted into six American schools up to 1877, 1,787, or 295 in a thousand, had one or more deaf mute relations. Color blindness is congenital and hereditary, and myopia is acknowledged by all oculists to run in families.

Having thus briefly alluded to some of the most important diseases, as predispositions thereto, which may be handed down from parent to child, we come to that very important question, What can be done by physicians and laity to remedy the evil? I am free to admit that under present conditions the physician is rarely consulted about the matter. Excepting in certain infectious diseases, his advice is rarely asked, and if the latter formality has been gone through with, not always followed. Nevertheless, it is our duty whenever and wherever the opportunity and occasion presents itself to place ourselves on record in behalf of individual and public health to prevent the consummation of marriages, the partners of which, one or both, would fall short of at least a reasonable standard of the prospective parents.

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DISCUSSION.

DR. E. M. GRAMM: The responsibilities that attach to us as physicians are very great in the matter of instructing the laity concerning the danger of transmitting diseases to their offspring. We cannot lay too much stress upon this danger when talking to a couple who are about to get married, and in whom there is a taint that will surely manifest itself in innocent children. At the present time I have under treatment a young woman who contracted syphilis a year and a half ago; her husband contracted it three years ago, and is more than likely beyond the stage in which he can transmit the trouble to the baby. They were married a few weeks ago, entirely without informing me that such a step was in contemplation. When I heard of it all arrangements had been made, and it was too late to prevent the consummation of the marriage. There is no possibility of a child resulting from such a couple being free from syphilis if it is born within the coming year, and possibly later.

Where we come in contact with people whose diseases are sure to infect their offspring we should give them the facts about hereditary transmission, and thus gradually educate them to their responsibilities.

DR. ANNA C. CLARKE: As to the question of individuals with diseases that can reappear in the offspring, I have had the same experience as Dr. Gramm has had. I now am treating a case of epilepsy that undoubtedly is hereditary. The Legislature should pass a law against the intermarriage of epileptics.

It is a fact that parents incur large responsibilities. I do not believe that a drunken father can propagate healthy children. A young man who will sow his wild oats in the world is sure to reap the results. but it is unfortunate that no matter how bad a man was before he is married, society glosses over the fact if he remains true after he marries. This is a matter that we should bring before the people and have public sentiment change in a more just direction.

DR. R. W. MCCLELLAND: I would like to endorse what has already been said. A great wave of interest is now going on over the world on this question.

I have now under my charge three cases of specific urethritis, all

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of whom expect to be married in a short time; I also have two others who are in the subacute stage, and they, too, expect to be married soon. Physicians should pay more attention to this subject. We should consider what is to become of the wives as well as the children. A man who is affected with urethritis should not get married, for the woman is sure to be the victim of troubles that generally result in invalidism. Should we not appeal to such a man to beware before he bring suffering to the one he is going to make his wife.

THE ASSISTANCE WE CAN GIVE A CASE OF LABOR.

W. C. MERCER, M. D., PHILADELPHIA.

It is true beyond a doubt that at times we get careless in attending our obstertical cases.

We take it for granted that things are normal, or everything will be so, as most cases take good care of themselves, yet at the same time we can frequently materially assist them if we have properly studied the individual case.

It is important that we should know certain conditions if we are to handle the case intelligently from the first.

At the beginning it is important that we make an external examination of the abdomen, and in going over it carefully we are able to make a diagnosis of the position of the fœtus, that is, we find in which quadrant of the pelvis the occiput or chin is located, also where the back and extremities are. With this you would also recognize whether the bi-parietal diameter, which is the diameter that engages, has passed the inlet of the pelvis, which is one of the planes of the least pelvic dimensions. The outlet being the other; so we must expect to find difficulty here in the passing of the head.

It is possible for us to find out the same conditions by an internal examination if it is done carefully in each case that comes under our observation, yet how few of us there are who make this observation.

It is especially important that we examine each case internally that we expect to attend, and should do it when we are engaged; whether Multipara or Primipara, and more so if a Primipara; so as

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to discover new growths and see if there are any in the lower uterine segment; also at the same time look for pelvic deformity. You find such growths now and then, and finding them you are prepared for what is to come and, if necessary, to call a surgeon.

Now that we have recognized that the head will, or has entered the inlet of the pelvis, you will feel satisfied that the inlet of the bony pelvis will not offer any obstruction.

We must now look to the soft structures and I will begin with the Cervix.

The Cervix and the lower uterine segment, for it helps to make up the lower segment at term. The cervix as a rule is obliterated, there being no cervical canal.

Each individual case is one by itself, as you seldom find a cervix that will go through the same changes in the process of dilatation.

A rigid os, properly speaking, is not the os, for the os is the opening. It is the cervical ring that is rigid or apparently so; for frequently, I believe, the condition is due to the position of the head and the bag of waters.

From experience I believe I have not seen a rigid cervix, or at least what I suppose they mean by a rigid one. I have seen a considerable number where they would dilate until you would have an os the size of a dollar or slightly larger, and then stand stationary.

Cause or rigid cervix questionable: May be due to several conditions, for instance, partially extended head, poor bag of waters or lateral flexion of the head, either anterior or posterior, with weak pains. The head low in the pelvis and at the same time being a snug fit.

You may assist the dilatation here by running your finger around the rim of the cervix to soften it; especially is this so if dilatation is well advanced.

Dilatation may be almost complete, that is, we will have a rim of cervix an inch wide with the anterior lip œdematous, due to the pinching of the cervix between the head and the under border of the symphysis pubis.

Here you can assist by making pressure on the cervix to reduce the œdema when there is no uterine contraction; pain beginning to push the rim of cervix up behind the pubic arch, and the cervical ring will retract around the neck of the child.

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This lessening the diameter of the head it will come down in the pelvis and make decided progress.

The bag of waters is a good dilator, but frequently there is very little or no forewater. We find at times the membranes tight over the head, at least during a pain, and preventing the head from descending and dilating the cervix.

Recognized by the rim of cervix being soft when at the height of pain. It is best to watch the condition for a short time to see that you are sure of the existing cause.

If positive then rupture the membranes and you will be surprised what advance there will be. Only recently I saw three cases of this kind, two of them were multipara and the other a primipara. All three making a decided advance in a very short time. In rupturing the membranes where this condition exists, you must be very careful; as it is a dangerous procedure, for frequently it is very hard to recognize the difference between the scalp and the membranes.

Many times has the scalp been punctured and even the skull, when only the membrane was supposed to have been ruptured. While apparently an easy thing to do, yet it behooves us to use caution.

Delays are frequently caused by a poorly flexed head, that is, you have a presentation of the parietal bones, anterior fontanelle or frontal bone.

This mild extension causing the occipito frontal diameter to engage, when the sub-occipito bregmatic should engage. The former being eleven and one-quarter C. M. The latter nine and one-half C. M., which would make a decided difference in the two as a dilator.

This very extension of the head, many times being caused by the membranes being tight over the head, also a mild pelvic deformity.

To remedy this extension we can place the patient on her side, the one corresponding to the occiput. This causes the uterus to sink to the same side and it, contracting the force, is carried down the spine of the child to the head and here by the law of the levers the head is flexed.

This extension of the head with a small bag of water you find associated with what is supposedly a rigid cervix; on account of

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these existing conditions, the uterus loses its force and requires interference.

In delivering a case with this condition by forceps I have found the cervix to dilate easily, so that I think the engagement of the long diameter the cause of the delay, making the presenting part reach from brim to brim, or from pelvic wall to pelvic wall.

Lateral flexion of the head, known as Nægele's and Litzman's obliquity. The former being a presentation of the anterior parietal bone. The latter the posterior parietal bone, associated with this partial extension.

This condition is harder to remedy than the others, but by putting the patient on her side corresponding to the occiput and at the same time make pressure with the finger to overcome the lateral flexion.

Occiput posterior and transverse positions can be assisted by catching the anterior wing of the Lambdoidal suture with the finger and pushing around toward the pelvic arch through the same side of the pelvis during a pain.

This can be accomplished in many cases. Another method is by puting the patient on her side, getting better flexion and by so doing the occiput comes on the pelvic floor and is rotated anterior.

The occiput coming anterior allows the smallest diameters to come through the outlet, and by so doing allows the head to advance more rapidly.

The assistance so far has been without instrumental means. Now we will consider the uses of the forceps, and the most important ones are traction and rotation.

Traction to assist the insufficient maternal forces and this traction must be made in a certain direction, which is the axis of the pelvis from the beginning to the finish, if we wish to secure good results.

Normally we find the occiput rotates through the shortest arc, then with the forceps we can rotate the occiput or chin under the arch, but we must have indications for their use before we are justified in putting them on.

We can sum up the indications into three. Danger to the life of the child, mother and insufficient pains. Danger to the mother recognized by the pulse and rise in temperature. The child by the rate of the heart, when slowed to ninety or a hundred and beyond one hundred and sixty per minute.

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To secure perfect results with the forceps we must make an accurate diagnosis of the position of the head and grasp the head in the exact biparietal diameter, then making traction in the axis of the pelvis and intermittent; not being in too great a hurry. Rotation may be made at the same time or before traction is made. (Authorities differ.)

Many babies' lives are lost by the unskilled use of the forceps and a few mothers, but the most frequent injury to the mother is laceration of the soft parts with infection.

Assistance in the third stage, or in delivering the placenta, should require little unless we have been in a hurry, and by Crede's method doubled the uterus on itself in the pelvis, and causing the membranes to become pinched in the folds of the lower uterine segment.

To overcome this we can push the hand down between the uterus and the symphysis pubis, pulling the fundus back, and by so doing straighten out the uterine cavity, and the membrane will slip free.

To conclude then we can find several ways to assist a patient in labor if we will take the trouble to hunt out the defects and use our knowledge intelligently.

DISCUSSION.

DR. N. F. LANE: I cannot find any fault with this paper. There is no doubt but that Dr. Mercer's method of rupturing the membranes when they cease to become a help in the dilatation saves many hours of waiting. By carefully examining women early in their pregnancies we may be able to save the life of the child or that of the mother through being forewarned of the existence of some complicating condition; and, while we may go through many years of practice without meeting with trouble, still the possibility of it occurring exists and the extra precaution is well worth taking.

A DEPARTURE FROM THE TRADITIONAL METHOD OF DELIVERY IN THE SECOND STAGE OF LABOR.

C. C. RINEHART, M. D., PITTSBURG.

In all the works on obstetrics that I have read the head is charged with the large majority of lacerations of the perineum, as I believe improperly, as, during the course of quite an extensive obstetric

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practice during the first ten years of my practice, I very frequently observe that, after the head has been safely delivered, with the perineum intact, I was frequently chagrined to find that, after the delivery of the shoulders, the perineum had been lacerated sometimes quite extensively.

All our text-books on obstetrics, without exception, so far as I have been able to learn, teach that after the birth of the head, our efforts should be directed toward bringing the anterior shoulder under the pubic arch and fixing it there while the posterior shoulder is being delivered, and that the posterior shoulder should always be delivered first.

I became convinced quite early in my practice that lacerations of the perineum were much more frequently caused by the shoulders than by the head, and that if it were possible to reduce the diameter when the shoulders were being delivered, many parturient women would be saved the pain, discomfort and danger incident to perineal laceration.

When the head has passed through the vulva, the parts immediately contract around the neck, sometimes quite tightly. When external rotation has been completed, the bis-acromial diameter of the child is brought into relation with the antero-posterior diameter of the pelvic outlet.

The round head, or rather somewhat elongated head, which, unless too suddenly forced through the vulvar orifice, evenly dilates the parts, is replaced by the more or less elongated and angular shoulders. The anterior shoulder under the authorized form of assistance becoming firmly fixed under the arch, the posterior shoulder is forcibly pushed against the perineum, and the perineum gives way frequently with a more or less extensive laceration.

When the head of the child has been delivered, the head drops backward, the face coming almost in contact with the anus, and the weight of the head falling backward, if not interfered with, will bring the anterior shoulder under the arch, and even cause it to escape.

This fact caused me to feel that nature here gave a pointer as to the proper method of delivery of the shoulders. Our text-books tell us that the anterior shoulder should be brought under or against the arch, and then by lifting the head the posterior shoulder should be made to emerge first.

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I believe this to be an improper method. That which I desire to advance is this. After external rotation of the head has been accomplished, and the bis-acromial diameter has been brought into relation with the antero-posterior diameter of the pelvic outlets. pressure downward should be made until the anterior shoulder has been entirely released from under the arch, when the diameter being very materially lessened, further delivery is easily and safely accomplished.

It is now over twenty years since I began to use this method of delivery, and I do not remember that I have had during all that time a single case of laceration of the perineum where the shoulders were the producing cause.

It seems to me that this method is the only rational way to deliver the shoulders, as it is manifest that were no accoucheur present, the very weight of the head dragging downward, would necessarily cause the anterior shoulder to escape from under the arch, and that when we raise the head and cause the posterior shoulder to escape while the anterior shoulder is still engaged against the arch acting as a fulcrum, the posterior shoulder sweeping along the perineum can scarcely avoid tearing it to a greater or less extent, and constitutes what might very reasonably be called meddlesome midwifery.

Williams (Obstetrics, p. 289) recognizes that the falling backward of the head tends to bring the anterior shoulder under the arch, and so seizes the occiput and chin with both hands, and makes downward traction until the anterior shoulder appears under the arch, when, I think, inconsistently, by an upward movement, he delivers the posterior shoulder first, which, from my standpoint, is a mistake, and fails to follow the clear and unmistakable pointing of nature, whose methods may be assisted, but can scarcely be improved upon, at a point at which she has shown her most wonderful adaptation of means to ends.

The whole process, from the fecundation of the ovum, through all the intricate processes of development, until in the fullness of time the child is delivered, is so marvelously beautiful and perfect that it would seem like an arrogance of man to say that the whole process could be carried through safely until the final delivery was about to be accomplished, when it becomes necessary to assist her in a manner contrary to her leading and this strikes me is the case here.

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I don't believe there is a physician in this company who has not had cases of labor under his supervision where the posterior shoulder was the culprit in lacerating the perineum, increasing the danger of infection and rendering the mother's life miserable until the fault was repaired either immediately or secondarily.

Any method that will reduce this danger is well worthy of our consideration. It may seem rather presumptous in me to controvert the host of authorities who have, without exception, taught the method here criticised, but "Hier stand ich; ich can nicht anders."

If my reasoning is faulty no one desires to know it more than I. I have been satisfied with my results and I think any one who will give the matter careful thought will agree with me that the method proposed is correct.

THE NEW-BORN CHILD.

FRANCIS W. BOYER, M. D., POTTSVILLE.

The care of the new-born child is naturally divided into two parts, the care required immediately on birth, and the subsequent care until it can no longer be regarded as new-born.

The physcian must, therefore, take certain precautions at once in connection with the alteration or establishment of certain vital functions, and prophylactic measures against certain morbid processes to which the infant is particularly liable.

The first of the functions with which we have to deal is respiration. This is established at birth for the first time, and often requires our assistance. Failure to respire is brought about by a considerable number of causes. Of these, obstruction of the air passages is the most important, because the most hopeful with proper attention. If the child fails to breathe, the little finger wrapped in gauze should be swept behind its epiglottis to remove the mucus which may have lodged there. The child should be held up by the feet, and its back sharply slapped. If this also fails, artificial respiration should be instituted. Many methods are in use, but mouth to mouth insufflation is one of the best as well as the safest. The nose should not be stopped, but left open to act as a safety valve. The

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breathing movements should be carried out at the rate of about forty a minute, and expiration should be favored by compressing the chest with one hand between breaths.

Other methods depend on flexion and extension of the trunk, but are not free from the danger of injury to the back.

In most cases as soon as the child is born, or within a minute after, a vigorous cry will announce that the throat is clear of obstruction and respiration is started. Rarely catheterization of the larynx or tracheotomy may be required on account of serious obstruction in the larynx or neck, but in such cases the prognosis will be grave.

If extended maneuvers to start respiration are necessary, it must not be forgotten to maintain the baby's temperature. Wrapping in heated flannels, or immersion in warm water may be required.

The circulation is profoundly altered at about the time of birth. Up to this time the pulmonary circulation amounts to very little, nearly the whole output of the heart going into the systemic circulation. In the change from the fœtal to the mature condition of the circulation the Eustachian valve disappears, the foramen oval closes. The oxygenation of blood is transferred in a few minutes from the placenta to the lungs, and the placental circulation disappears. This takes place spontaneously, but we may aid it a little by laying the baby on its right side, so that gravity may assist in retaining the venous blood in the right heart. The cord should be tied after it has ceased to pulsate, and cut off about an inch from the umbilicus. The advantage of delaying the ligation till the cord has ceased to pulsate has been shown to be the preservation to the infant of between two and three ounces of blood, which would otherwise be lost with the placenta.

In case there are twins the cord of the first should be cut between two ligatures to save the second from loss of blood through anastomosis of the placental vessels.

The function of digestion is a new one for the baby. For the first time it must digest its own food. It is within the province of the pædiatrist rather than the obstetrician, but it is necessary to give some directions about the immediate feeding. It is well to put the baby to breast every four hours until lactation is fully established, and to give it a small quantity of warm water from time to time.

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After the secretion of milk is fully established, the baby should be nursed every two hours during the day, and once during the night.

The baby's meal hour should be fixed, and never varied except for definite medical reasons. By far the most desirable food for the baby is its own mother's milk. If this is impossible, preference will vary between a wet nurse and artificial feeding. From the standpoint of the baby's digestion alone, the wet nurse is more desirable. She should be personally acceptable, her milk should be of good quality, her child should be of nearly the same age as the one to be nursed, and above all, she should be free of syphilis.

If a wet nurse cannot be procured or will not be acceptable to the family, artificial feeding must be adopted. It is not my purpose to go into the question of substitute feeding, but it is well to keep in mind one arbitrary mixture to start the baby on. Such a one is five ounces of whole milk, five ounces of rice or barley water, one ounce of lime water and three drams of milk sugar. Such a mixture contains 1.80 per cent. fat, 6.10 per cent. sugar, and 1.45 per cent. protein, or malted milk is easily prepared and readily procured and makes an excellent substitute.

Besides attending to these normal alterations in functions, there are certain accidents and morbid processes that should be guarded against as a routine matter.

THE EYES.

As soon as the head is born, the orbital region should be wiped off with a soft cloth or ball of cotton wet in a solution of boric acid. The conjunctival sacs should then be flushed out with the same solution, and finally two or three drops of a 2 to 5 per cent. solution of protargol or argyrol instilled. This should be performed with especial care when there is reason to suspect gonorrhœal infection of the mother.

If gonorrhœal conjunctivitis occurs in spite of this precaution, it requires prompt and energetic treatment. The disease appears in the second twenty-four hours after birth. The lids are hot, red and œdematous, and from beneath them issues a profuse discharge of thick pus. The scleral conjunctiva is red, œdematous and sharply

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elevated around the cornea, and the palpebral conjunctiva is equally inflamed. The disease is recognized by the time of its appearance, its evident severity, and the recognition of the septic micro-organism under the microscope.

The pus must be washed away as fast as it accumulates with boric or normal saline solution. Instillation of a few drops of argyrol, 20 per cent., is useful. or painting the everted lids with nitrate of silver solution, afterward neutralizing with a solution of common salt. In all such cases it is advisable to consult with a competent oculist.

A simple catarrhal conjunctivitis is common in infants, and should not be mistaken for the severe form. It often affects but one eye, and is mild in symptoms and yields readily to irrigation with boric acid.

THE CORD.

The cord should be aseptically dressed with a dusting powder of salicylated starch or boric acid and calendula, and care be taken to avoid wetting the dressing when the baby is bathed. The dressing need not be changed till the cord sloughs off. An antiseptic dusting powder should be used on the umbilicus until it is dry.

Certain congenital malformations must be kept in mind. The mouth should be inspected to ascertain the presence of tongue-tie, and the frænum divided if necessary. It should be divided with blunt scissors close to the floor of the mouth to avoid the larger vessels.

In boys the prepuce is often contracted and should be stretched or circumcised, and adhesions to the glans be broken up.

Imperforate rectum is a comparatively rare condition, but should be looked for if no meconium is seen after twelve hours. Recent statistics seem to show that a very extended search ought to be made for the blind end of the rectum by the perineal route before inguinal colostomy is justified.

BATHING, CLOTHING AND HANDLING.

Immediately after birth the baby should be well greased all over to dissolve the vernix caseosa. Olive oil or lard is a satisfactory ma-

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terial. Wrap in soft flannel and lay to one side for three or four hours before bathing, when the skin will be found clear It should then receive a bath with warm water and Castile soap; with a soft cloth no friction will be required to thoroughly cleanse the skin. The axillæ, groins and all folds of the skin should be powdered with talcum, rice powder or cornstarch. The physician should always oversee its dressing, especially to prevent its chest from being compressed by its clothing.

An abdominal bandage three inches wide should be placed around the abdomen over the umbilical dressing. A soft linen diaper, a stockingette, or knit shirt, a flannel petticoat, a second petticoat of flannel in winter and muslin or linen in summer, and the dress completes the outfit. Knit socks may be added in cold weather. The skirts should be all hung from the shoulders and not be held up by bands compressing the chest. The child should be laid on its right side in a crib or basket without a pillow under the head, not in a cradle and not in bed with the mother on account of the danger of overlying. The census reports do not give figures on death from this specific cause, but of deaths from "suffocation" at all ages, 69.91 per cent. are during the first year of life.

The baby should be handled only for a definite purpose: To put it to breast, to give it its bath, or to change soiled diapers. The diapers should be changed frequently, as the new-born baby urinates very often, although this may not be recognized because the urine is too pale to stain the diaper.

The baby should be bathed once daily, and for the first week or two should not be immersed but bathed on the nurse's knees After the bath the folds should be powdered. If the infant is weak omit water and rub with olive oil.

The buttocks should be washed off, dried and powdered each time a soiled diaper is removed.

The references made have been taken from the normal conditions except in a few more common instances. Cleanliness is the highest order of hygiene. By its application to the new-born child many of the ills incident to the few days succeeding the birth may be avoided, and a wholesome start in life assured to the human being just ushered to its new environment.

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DISCUSSION.

DR. R. W. MCCLELLAND: Some recent statistics concerning the use of antiseptics in the eyes of new-born children may be of interest in this connection. In six thousand cases treated in Germany and carefully watched we find the following results: In two thousand cases where nitrate of silver was used there were eight cases of blindness; in two thousand in which protargol was used there were four cases of blindness; after the use of argyrol in the same number of cases one case of blindness resulted. The strength of the solutions used was not stated in the report as it came to me.

THE TECHNIQUE AND DUTIES OF THE PARTURIENT NURSE.

D. W. STRAUB, M. D., BETHLEHEM.

The technique of obstetric nursing, is of necessity a different proposition in different places, and under different conditions.

Differs, as it is supervised by the different physicians in attendance. The preparations planned, and ordered by some accoucheurs are sometimes (?) "Worse than the licking," and the trained nurse, the prospective mother, and her immediate friends are kept busy for weeks preparing and buying material, and keep wondering—"What next?" in anticipation of the event,—not to mention the trunk full of paraphernalia the physician sends for his personal use during labor. There are, therefore, no set rules up to date to satisfy all physicians. However:—The golden rule, must always be—*"Absolute Cleanliness Not Overdone."*

An understanding with the physician and patient regarding the things to be provided and prepared for the lying-in period should always be had at some time prior to the expected confinement. And the best that can be had, within reasonable bounds of the patient's pocketbook, should be provided. A rubber blanket, or oilcloth, a number of quilted pads, plenty of clean cloths of old muslin or linen, washed and sterilized; several sheets and two or three dozen napkins made of cheese cloth and absorbent cotton, all sterile, should

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be at hand in the most ordinary case. And the nurse should see that they are clean and properly sterilized before they are used.

The nurse should be present from the very beginning of the parturient act. During the first stage of labor she should see that the patient's lower bowel is emptied with a full soap suds enema; followed by a washing out with a clear saline solution. She should also see that there is plenty of water, both hot and cold, and basins for disinfecting hands, instruments, etc. If possible, the patient should have a full bath when labor begins, and the nurse should see that the external genitals of the patient are thoroughly cleansed, so that infection may not be carried into the uterus during the physician's examination? After this bath the nurse should keep the patient from the common toilet.

The nurse must also prepare the bed for her patient during the first stage. The rubber blanket or oilcloth over the mattress, a bottom sheet or draw-sheet next, another rubber sheet, or large paper pad over this, and last quilted pads, made of old, soft, clean material sterilized. Where a Kelly pad is used, the second rubber sheet would not be needed. During the second and third stages of labor, the nurse should be in constant attendance with the physician. When the second stage begins, she should put the patient to bed, and remove all superfluous clothing; a night dress and (possibly) stockings or leggings; should be all the patient wears. The patient she places in whatever position preferred by the doctor, which is now generally the dorsal. In this position, have a pad under her hips, and the night dress well up the back to keep it from getting soiled; the pad can easily be rolled up and removed, and a clean one substituted.

If chloroform or ether are used as an anæsthetic, they are usually administered by the nurse, under the physician's direction.

In instrumental cases, the nurse assists the physician in holding the limbs, placing the patient in proper position, and in the various ways directed by the operator.

After the baby is born and while the doctor ties the chord, the nurse can "make pressure" over the fundus of the uterus to induce contraction, and to prevent post partum hæmorrhage, etc.

An old warm blanket is usually in readiness, so that as soon as the cord is cut the baby may be wrapped into it, and then the

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nurse places it upon its right side, on a bed, or whatever receptacle she has for it.

After the placenta is expelled the patient should be well cleaned, all wet pads and soiled linen removed, a napkin and binder applied, the night dress drawn down, and the patient placed in a comfortable position upon the bed for the post partum rest.

During the different evolutions of accouchement nursing of the past thirty years there has been a time when the principal duty of the trained nurse seems to have been to douche the patient; to turn "the hose" up the poor parturient woman's vagina from one to six or more times a day; and right about at this time is the place when this part of her "duties" commenced.

Happily for everybody, this feature of her daily toil and trouble has been very largely abandoned, so that now, we only use the douche, when there are specific indications for it.

The nurse is usually instructed to put on "the binder" well down over the hips, pin it snug below, and looser above, and discard it altogether after the third day.

After a rest of from one to three hours, the patient should be thoroughly washed wherever she is soiled, her clothing changed if soiled, and the napkins and pads replaced by fresh ones. The napkins should be changed as often as is necessary to avoid soiling patient and bed. From the second or third day the nurse should also apply a loose binder or sling for the breasts, if the baby is to nurse the mother. And should it be necessary to raise the baby "Bottle fed" entirely then a tight breast binder should be applied, so that the milk may not become so profuse, and to allow the natural body temperature to dry up the milk. She should not keep this binder on too long, and she should not use any camphor or any drug without the physician's orders to dry up the milk. "Kaoline composition poultices" are better and don't shrink up the milk glands. Before our patient, just delivered, takes a nap the nurse offers her a cup of hot milk, which will be gratefully received after the trying ordeal.

She now picks up the baby, sees that the cord is not bleeding, and with warm oil, alboline, vaseline, or warm fresh lard, thoroughly inuncts the baby, and with a soft, dry cloth or towel, easily rubs off the "Vernix Caseosa" and any other matter that the baby may

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be soiled with. The eyes she carefully washes out with a weak boracic solution, and again carefully wraps it into another clean, soft, warm blanket or cloth.

From four to six hours after its birth she should give the baby its first bath and dress it. If the baby is to nurse, it is placed to the breast by the nurse every four hours for a few days, commencing eight hours after it is born. After the establishment of milk in the breasts the baby nurses oftener, on an average of about two and a half hours.

Should the patient not void urine in twelve to sixteen hours after the baby is born, it becomes the nurse's next duty to use the catheter.

An important feature of confinement nursing is proper attention to the milk glands. The nurse must know first—is there any milk? Does the baby get it? Are the breasts normal? or are they hard and caked, and inflamed? And she should know how to, or be instructed how to, apply massage to soften them and to get the proper secretion. She should feed mother and child at regular intervals, as ordered by the physician.

If nothing unusual occurs and both mother and child improve and develop normally, the nurse is usually discharged, at the end of the fourth week.

In substance then

The nurse should be engaged some time before labor is expected. She should plan and arrange with physician and patient what is needed,—that can be had. She must recognize the great importance of cleanliness in all things, and at all times.

She must be competent to recognize anything in the condition of mother or child, abnormal to good health, and keep a daily record of pulse, temperature, excretions, bath, etc.

And be competent to prepare such food as is necessary for mother or child. She must have full charge of the linen, and clothing of her patients; knowledge to give enemas, antiseptic douches, and how to use the catheter.

And next to the physician have entire charge and control of mother and baby for the first four weeks after confinement.

She must have tact, to allow no meddlesome nursing, feeding, and visiting by the "good friends," who are so numerous and solicitous, all at once.

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She should prescribe, or administer no medicine, or do no other possible thing, unless ordered, and agreed upon by the physician. And finally—she should be the most experienced, and the best nurse you can get.

GESTATIVE CONDITIONS EVENTUATING IN ECLAMPSIA.

WM. A. HAMAN, M. D., READING.

"And, lastly, so to arrange sanitary and hygienic measures that, wherever possible, disease may be prevented. Could Hippocrates meet again a class of students at some modern colleges, and discuss the changes which twenty-five centuries had wrought he would dwell upon this latter development of the science and of the art as the crowning benefit which the profession has bestowed upon the race." (Osler's Modern Medicine, Vol. I.)

If there is, in the whole range of medicine, a more striking illustration of the foregoing quotation than the benefits of prophylaxis, derived from the treatment of those gestative conditions likely to eventuate in eclampsia, I am sure I can not name it.

Anyone who has had the misfortune to witness death from this truly appalling explosion of nerve force, or a crippling hemiplegia the result of apoplexy of the cerebral arteries, or the still worse permanent mental defects, with or without aphasia, will certainly agree that prevention must be the goal of modern treatment instead of cure as formerly striven for.

Prophylaxis being the keynote of our endeavors it naturally follows that an inquiry into the conditions underlying such awful manifestations of nervous energy is absolutely essential to intelligent efforts at checkmating their vicious tendencies.

It would be a waste of valuable time to trace the evolution of the modern conception of the etiological factors of eclampsia. It is true enough that these conceptions are mainly hypothetical, so far as actual demonstration is concerned, and will probably undergo some modification, yet the present treatment based on these hypotheses yields results so much in advance of that formerly obtained

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that we must concede that we are more accurately informed than our forebears.

There is one striking feature connected with the modern conception of the causes of puerperal convulsions and that is the relegation of the condition of the kidneys to a position of subsidiary importance in the etiological picture of these factors, while at the same time admitting the vast influence of the condition of these organs for the weal or woe of their possessors, so far as an outbreak of eclampsia is concerned.

This paradoxical statement needs elaboration for its proper understanding. It is no longer accurate to regard eclampsia as synonymous with uræmic convulsions and to consider the outbreak of the eclamptic seizures as due to renal degeneration per se.

The renal involvement must be regarded in the light of the "last straw that breaks the camel's back;" as but one of a series of factors and, although a weighty one, yet not as the sole factor.

The institution of the pregnant condition with its attendant increase in anabolic metabolism, is inevitably associated with augmented affiliated catabolic processes, the disposition of the products of which falls upon the emunctories of the mother. The organs chiefly involved in the ultimate disposal of this marked increase in waste material are the skin, liver and kidneys. That the physiological ability of these organs is severely taxed by the strain incident to the steady increase in the accumulation of waste products certainly goes without saying. It is equally plain that the additional labor thrown upon these emunctories by unsanitary surroundings and unhygienic modes of living may quite easily be the factor that turns a physiological process into a pathological condition.

Again, if there is any inherent lack of physiological ability on the part of any of the emunctories to meet unusual demands the boundary line between the physiological and pathological may be quickly overstepped.

The emunctories chiefly responsible for the eclamptic disaster are the liver and kidneys. Too little attention so far has been given to the liver as an depuratory organ. Physiologists teach us that the liver is the main factor in the conversion of worn-out proteids into soluble urea. The destruction of the toxins developed in the fermenting mass within the intestinal canal, with the leucomaines,

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those metabolic alkaloids "some of which may become active and many of which are physiologically active," is also accomplished by the liver. It is not an evidence of gullibility to believe that certain people are endowed with insufficiently vitalized viscera; let gestation occur in such an individual and the liver may soon lose its ability to dispose of the accumulating poisons. This failure on the part of the liver to properly prepare for excretion worn-out proteids, leucomaines and bacterial toxins imposes upon the sufficiently taxed kidneys an increased amount of labor that may cripple them disastrously.

So much for the definitely known conditions settled by pregnancy upon the emunctories of the mother.

Unquestionably the pregnant woman elaborates the ordinary poisonous waste products in excessive amounts.

That in addition to these products the pregnant woman produces entirely new toxic substances is the hypothetical condition before alluded to.

This has been called the auto-toxæmia or pregnancy and is regarded as *directly the result of the gravid state or elaborated as an anomalous phase of gestation,* the result of hepatic and renal insufficiency and is known as the pre-eclamptic stage. For reasons that will be given later I prefer to regard this production of auto-toxic material as the result of an anomalous phase of gestation, principally hepatic insufficiency, and not as directly the result of the pregnant condition which would make toxæmia invariably associated with pregancy; there can be no question that the poisons are produced in increasing quantity up to the time of delivery but as long as the emunctories are active there is no toxæmia.

The French school of pathologists have been the most active in developing and supporting the theory of a special auto-toxæmia. Tarnier has established that normally during pregnancy a certain amount of fatty degneration of the liver cells obtains. Gross changes in the liver such as necrotic areas and hæmorrhagic infarcts have repeatedly been found in the liver of those dying from eclampsia, but it is difficult to determnie whether the relationship of these gross changes to the eclamptic condition is that of cause or effect; but the demonstrated fatty degeneration of the liver cells in normal pregnancies certainly, in some way, must modify the products of the functional activity of the liver.

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It is well known that the renal tissue frequently undergoes departures from the normal in the pregnant condition. There is one renal change that is frequently established, and, although practically identical with the changes met with in other affections, yet it is attended with different sequences. I do not now refer to the acute nephritis that may develop as a purely accidental complication and that has the same causation, symptoms and sequels as when it occurs in the non-gravid. Neither do I allude to the chronic nephritis that may antedate pregnancy, and that may have been latent, existing without evidence of the disease, but to the condition known as the "pregnancy kidney." Tarnier has shown that "pregnancy tends to the retention of poisons within the body for the urine of the pregnant woman is less poisonous than normal, and the urine of the eclamptic is less poisonous than the urine of normal pregnant women."

This is not the result of inflammation but of changes in the parenchyma of the kidney and not in the stroma. Those who have had the opportunities to examine these organs, and who are qualified to determine such questions, agree in limiting the changes in pregnancy kidney to the renal epithelia, which undergo a metamorphosis of a fatty character.

These changes are the result of the autotoxæmic conditions developed by the gravid state and are to be likened to the renal changes induced by the infectious diseases, erysipelas, diphtheria, typhoid fever, etc., that likewise develop as the result of the production of specific toxins and too rapid tissue waste. These parenchymatous degenerative changes in the renal epithelia in the infections are the result of the degraded nutrition and the baneful impress left on these structures by the toxic materials in their passage through them for extrusion from the body; in pregnancy these degenerative changes result from the latter cause and overwork. This last factor, overwork, which can be taken as a predisposing cause, is the large increase in the labor required on the part of these epithelial structures in depurating the blood of its large content of effete material of fœtal and maternal origin.

Multiple pregnancies and large corpulent women, in other words, those having a large tissue waste constitute a large proportion of the

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eclamptics. The functional incapacity consequent upon the pathological condition of the renal epithelium results in retention within the body of the toxic principles produced by the gravid condition and those resulting from general catabolism. In this way a vicious cycle is established. the toxæmia inducing renal insufficiency which, in turn, augments the toxic condition of the blood. I have alluded to the similarity in the histological alterations existing in the renal degenerations of the acute infectious diseases and those of the pregnancy kidney. I want to call attention to a marked dissimilarity in results that I think is significant. None of the acute infections with marked renal changes have any tendency to the development of convulsive symptoms similar to those of eclampsia or uræmia. Even in diphtheria where complete suppression of the urine may occur "symptoms which can without doubt be attributed to uræmia are not met with." (Allbutt's Sys. Med.) In scarlatina the uræmic phenomena are the result of actual nephritis as a sequel, and do not occur from *renal changes* during the height of the scarlatinal disease.

To my mind this is the result of the hypotensive effect of the toxins of the acute infections on the vasomotor centres, that in some cases overwhelm them with fatal results which is so generally attributed to "heart failure;" in these acute infections there is an utter absence of any approach, under any circumstances, to the hypertension found in the renal degeneration of pregnancy that results in eclampsia; an argument in favor, I think, of the dependence of the eclamptic outbreak upon the marked hypertension, per se. rather than upon the actual quantity of the toxins.

I made the statement that it is no longer accurate to regard eclampsia and uræmic seizures as identical processes; this assertion is based on differences noticed by various observers.

Bourneville, a pupil of Charcot, at the latter's suggestion, was the first to systematically make thermometric observations in diseases of the nervous system, and found that in eclampsia the temperature rises above the normal and so remains elevated during the intervals, and undergoes a slight rise at the time of a convulsion. If the eclampsia promises to be lethal the temperature increases and may be very high. If the patient improves and recovers the temperature lowers until it reaches the normal.

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In uræmia, on the contrary, the temperature falls from the beginning and continues to fall gradually until death, when it may reach such a subnormal point as 93° F., and even still lower.

"Hence a very striking contrast exists between the thermometric curve of puerperal eclampsia and that of uræmia, which we will sum up in the following statement: In the beginning a *lowering* of the temperature in uræmia is noticed, and an *elevation* of the temperature in puerperal eclampsia. In the course of uræmia the temperature falls gradually, while in that of eclampsia it rises more and more from the beginning of the attack, usually very suddenly. These differences are greater at the approach of and even at death. In uræmia the temperature falls very much below the normal; in puerperal eclampsia, on the contrary, it rises very high above the normal." (Charpentier.)

This thermometric rise in eclampsia is taken by some to give color to their theory that certain of the ubiquitous microbes are the agents.

"Another phenomena which is essentially uræmic and not present in eclampsia is dyspnœa." (Edgar.)

"Eclampsia may occur without albuminuria and without visible alteration in the kidneys." (Edgar.)

"The recently introduced science of cryoscopy discriminates between the blood of known uræmia and that of eclampsia." (Edgar.)

These statements go far to prove that some factor, other than those usually held back by the degenerated renal organs, is the predominating influence in the development of the eclamptic syndrome.

Modern thought in connection with the prophylaxis of eclampsia has crystallized in the following statement—that "With the exception of the fulminating type of eclampsia, where art almost always fails, it may be stated that prompt action will in the vast proportion of cases, prevent the development of eclampsia." (Grandin.)

This certainly throws a large responsibility on the physician that can only be discharged by alertness.

The practical application of our knowledge concerning the causation of eclampsia (demonstrable and hypothetical), in its prophylaxis, is found in a more careful regulation of the prospective mother's surroundings, habits and diet. We should discourage the

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lax custom of seeing the patient for the first time when she is in actual labor. She should be encouraged to consult her physician in regard to her many discomforts. It is true that for many of these we can do nothing, but the frequent consultations will probably enable the physician to detect, in their incipiency, the departures from the physiological in her important functions. The primiparous and the corpulent, those having a large tissue waste, should have our especial solicitude.

We should insist that she be dressed so as to allow the utmost freedom to the play of the thoracic wall, in this way encouraging deep breathing, thereby securing thorough oxygenization of the blood, a powerful factor in the proper disposition of toxic material.

The stimulation of the skin secretions can best be secured by clothing, protective enough to avoid surface chilling, and frequent bathing with friction. Diet should be moderate in quantity but nutritious, avoiding an excess of meats and fats as well as condiments. Alcohol, from its irritative effect upon the liver, can only be mentioned to be condemned.

The condition of the intestinal tract requires close attention. The Homœopathic school of practitioners are entirely too negligent in this particular. Bouchard, in his work on Auto-toxæmia, has demonstrated by actual experiment on animals that diarrhœas diminish the toxicity of human urine. What folly it is, then, to allow a sluggish colon to add the burden of copræmia to the already heavy strain on the emunctories. This knowledge should be of priceless value to the physician in his treatment of the threatened woman; free elimination through the colon is of vital importance. Absorption is slow in those who are anasarcous and purgatives, in consequence, must be given in much larger doses.

Any trace of defective liver action, particularly jaundice, should receive instant attention.

The interrogation of the renal organs is, of course, effected through urinary examinations. In primipara and the corpulent this should be made at intervals of two weeks during the last few months of pregnancy.

Albumin, unfortunately, neither by virtue of its absence, presence or quantity, can be taken as a true index to the functional capacity of the kidneys; when present it occasionally plays the trick of ap-

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pearing intermittently and through this fugaciousness albuminuria may escape detection.

A persistently low specific gravity with no more than the ordinary output of urine in twenty-four hours should, of course, put us on our guard.

An estimation of the quantity of urea passed per diem is a still more accurate index to the functional ability of the kidneys. This latter process is the most accurate method of testing this efficiency, yet we should not forget that we are estimating the quantity of but one ingredient of the urine and a non-toxic substance at that; it is quite possible that, at the same time, other more toxic substances might not find the kidneys permeable. So the excretion of the normal amount of urea testifies to the relative, and not to the absolute efficiency of the renal organs. Unfortunately this method is not simple even when the popular Doremus instrument is used; the urine must be freed of its albumin; it must be diluted in case the sp. gr. is 1025 or over; the hypobromite of soda solution must be freshly made, which involves the handling of that vile element, bromine.

All this means time and labor and I feel sure that very few go to this trouble. What do we gain by this information? Nothing that can not be acquired by simply measuring the quantity (24 hrs.) of urine and taking the sp. gr. of the mixed urine. When defective in quantity and too low in sp. gr. we believe that because urea and other solids are difficult of excretion that toxic substances are accumulating in the system. We gain no knowledge of the actual amount of mischief until the symptoms, premonitory of eclampsia itself, develop. We all know of water-logged cases, almost anuric, that were dragged along and, failing to develop any of the premonitory symptoms of eclampsia, were happily delivered. Contrariwise, we know of cases of eclampsia developing where the renal symptoms were slight, the attack apparently evolving without sufficient renal disease.

After all, this information about the functional disability of the kidneys does not give us the most useful insight into the shrouded conditions underlying the outbreak we so much dread.

What we most need is a measure of the resentment of the nerve centers to the presence of the toxic substances that are accumulating in the blood.

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How do the nerve centers tolerate the toxic material? is a question of far greater moment than how much poison is accumulating. What does it matter, from the viewpoint of eclampsia, how much poison is accumulating as long as it is well borne? Whether albumin be much or little, whether the percentage of urea be high or low, are questions that, of course, should be answered, but they are not of equal importance with that of the arterial tension which, unquestionably, is of transcendent significance, because the arterial tension is an accurate index to the toleration or the resentment of the nerve centers. These statements may seem somewhat iconoclastic but I am sure that the future will substantiate them.

The varying degrees of excitability of the nerve centres in different women are of as great importance to the development of eclampsia as in other convulsive troubles. On the whole, pregnancy generally is accompanied by a more or less unstable condition of the nervous system, somewhat akin to that which obtains in infancy. This is particularly true of primipara in whom eclampsia is so frequently encountered. It goes without saying that a comparatively small quantity of toxin will, in a pregnant woman with irritable nerve centers, cause convulsions, while a larger quantity, in a stolid, phlegmatic woman, will be borne without such explosions of nervous energy. Therefore, it must be plain that if urinary examinations could actually determine the exact amount of toxic materials that fail to be excreted (which no one claims), this information would not be an infallible guide to the results of this retention.

A heightened arterial tension has been the invariable attendant on all actual eclamptic attacks so far observed, and we know that an abnormal increase in tension precedes the eclampsia. In this respect it parallels what we know of the increase in tension in uraemic conditions and the marked increase in the hypertension in the acute uraemic outbreaks.

This hypertension is the result of the retention of toxic materials within the blood that have a stimulating effect upon the vasomotor centers, exciting general vascular spasm, which results in a rise in blood pressure.

This is a conservative attempt to get rid of these obnoxious toxins, in that this rise in tension keeps the urinary output at a higher level than would otherwise be the case.

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A persistent arterial tension above 135 mm. is abnormal. This hypertension may remain comparatively moderate, entailing but little likelihood of an increase sufficient to cause convulsions, or it may speedily rise to the danger point; repeated observations are necessary to learn its trend.

The convulsions seem to be directly due to the heightened arterial tension. Physiologists teach us that the cerebral vessels are without demonstrable vasomotor nerves; in some way it seems that the inability of the vasomotor system to lessen the increasing quantity of toxic blood flowing through the cerebral arteries, that must attend every upward step in the hypertension, is directly responsible for the production of the convulsions. Certain it is that as soon as the tension is decidedly reduced the convulsions cease; all drugs and measures of benefit during the convulsive stage are, without exception, hypotensive in their action.

Therefore, I think it is plain that the measure of the resentment of the nerve centers to the presence of the toxins accumulating in the blood we find in the millimeter scale of the sphygmomanometer, and that in furthering the prophylaxis of eclampsia, our most valued ally is this instrument.

During the past twelve months I have had two experiences with marked hypertension in pregnancy. A brief review of these cases will not, I think, be without interest.

Mrs. Edw. D., formerly quite healthy, while pregnant the third time called on me in Oct., 1906, engaging me to attend her. She was low spirited, was sure she was going to die this time. She was seven months advanced and had some œdema of the feet; urine was non-albuminous; arterial tension was 140 mm. This slight hypertension I attributed to her psychic condition. I requested her to see me occasionally; this she neglected to do. Dec. 4th, she sent urine for examination; this I found very albuminous and it contained hyaline and granular casts in abundance.

I called upon her the next day and found her œdematous in the lower limbs with puffed face and hands. She had excessively severe occipital headache, and such poor vision that across the room she could not distinguish between men and women; she also had bright sparks, "spangles," before her eyes. Her pulse was 72 and her arterial tension was 225 mm.

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I requested a visit from her husband that evening and made arrangements to induce labor the following morning, because I believed in the imminence of convulsions. During the same night labor set in spontaneously and in a very short time a dead child was born breech first. In twelve hours the arterial tension had dropped to 210 mm., and continued sinking until it became normal.

Mrs. S., pregnant the fourth time. She has for years been afflicted with chronic interstitial nephritis and has undergone decapsulation of both kidneys in 1902 at the hands of Edebohls, himself. Anyone interested will find a full report of her case in Edebohls' Surgical Treatment of Bright's Dis., Case No. 23, page 195. Edebohl claims "a practical cure;" I can not agree with his optimism because in the five years following the operation I never found the sp. gr. normal nor the quantity near the normal output. This woman took a remarkably interest in her case and estimated the sp. gr. herself many times daily and very rarely found it to be more than 1008.

I have known this woman many years, have attended her in all her labors and first made the diagnosis of nephritis in 1899.

Her tension in 1905, when I first became interested in this subject, was 155 mm., and this degree of hypertension was maintained, without variation, during the following year. When she was three months pregnant she called on me and I found that her arterial tension was 165 mm. In two more months it was 177 mm. She was indifferent and I did not see her again until nine days before her accouchment. Her tension at this time was 220 mm. She passed 32 ℥ or urine per diem, the sp. gr. being 1004. For the first time in years I found albuminuria; the sediment was abundant, heretofore this was not appreciable. It contained hyaline and very granular casts, renal epithelium and very granular, squamous and columnar epithelium. The only distinctly threatening symptoms were an occasional headache and cloudy vision; a brisk purge always promptly dispersed the headache.

I was uneasy about this high tension and suggested the possibility of being obliged to induce labor prematurely for her safety, but she demurred, "no monkeying with her," as she termed it; and, knowing the weaker tendency to the development of eclampsia in those having chronic nephritis prior to pregnancy, I did not press my opinion

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and in eight days she passed through a normal labor without incident.

The study of arterial tension with reliable, standard instruments is in its infancy and whatever discrepancy exists in results is mainly the consequence of the use of primitive instruments which give higher readings. Bear in mind that, in normal pregnancy, there is no essential hypertension. This I have demonstrated repeatedly in phlegmatic multipara who have had normal tensions during pregnancy and even in labor between pains. If there is one invariable accompaniment of aututoxæmic retention it is hypertension, which is the most infallible guide to our appreciation of the effects of this toxæmia.

This, to my mind, signifies that there is no autotoxæmia in normal pregnancy, but that it arises as an anomalous phase of gestation. Were this toxæmia directly due to the gravid state hypertension would always be present in pregnancy. I have so frequently disproved this to my own satisfaction that I must conclude that the autotoxic conditions are anomalous, due to defective hepatic action, this speedily producing the pregnancy kidney when the toxic materials progressively accumulate.

There is nothing more firmly fixed in the realm of vascular tension than the invariable association of marked hypertension with eclampsia.

Observations are still wanting as to where the point of hypertension is, the overstepping of which is likely to precipitate an attack of eclampsia. This ground is still virgin and I am sure it is a most alluring field, promising large results to those who have the opportunities for tilling it.

From my study of this subject and experience with some cases of gestative and nephritic hypertension, I have gathered impressions that embolden me in having the temerity to hazard a guess as to where the danger line is. I would remind the reader that the average normal tension is 115 mm. (100 and 130 mm. being low and high normal tensions, respectively), and that any tension persistently above 135 mm., not due to psychic stimulus, must be viewed with suspicion, whether albuminuria exists or not, and is to be taken, in the gravid state, as evidence that the balance between secretion and excretion has been disturbed and that autotoxæmia exists.

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A steady increase in tension shows infallibly the advance of vasomotor spasm excited by the accumulating toxins and indicates the necessity of looking after the emunctories. Should the 200 mm. point be reached we should be apprehensive and the most energetic measures should be instituted to unload the system of the poisons that are rapidly heaping up or in a short time symptoms of threatening eclampsia will develop. Should it increase in spite of depurative expedients and approach 225 mm. then, in the interest of the mother, the question of the induction of premature labor should be decided.

Hypertension occurring in women having had a pre-existing chronic nephritis seems to be less ominous and is better borne because the hypertension is more likely to be relative than absolute; in this respect it harmonizes with the lower tendency for eclampsia to develop in such subjects, and, as a result, we need not be so pessimistic in our opinions as is demonstrated by our second case. In such cases I would set the mark of imminence at least 25 mm. higher, say 250 mm.

The first case reported had an increase of 95 mm. above the high normal, while the second case had an increase of but 65 mm., as her accustomed tension prior to pregnancy was 155 mm.; her nerve centers had probably adjusted themselves to this high tension, so the 220 mm. point was only relatively high for her. I say again that in setting these figures for guidance I am influenced by my own experience as I have not been able to gather evidence on these points from others.

It is quite possible that very impressionable women may develop eclampsia from a lower tension and some might tolerate a still higher pressure; but I feel sure that 225 mm. is the point where active interference will be justified. Immediately before and during the outbreak the tension is, I think, well above 250 mm., and probably close to 300 mm.; this, at least, is the experience in uræmic convulsions.

Taking the arterial tension is simple in the extreme and involves far less annoyance than the estimation of urea. Some acquaintance with the physiologicl variations and the pathological deviations is, of course, necessary to check the results obtained.

The measures resorted to for the phophylaxis of eclampsia are to be found in all our standard works, but there is one method of

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treatment of some value that has not as yet been accorded a place in many of our text books; I refer to the dechloridation treatment of nephritic œdema.

Some of these cases are the result of the retention within the tissues of chloride of sodium. It is well known that crippled kidneys do not at times excrete the normal quantity of sodium chloride, (10 to 16 grammes) per diem, owing to the impermeability of the kidneys for this substance; next to urea, the chlorides are the principal solid constituent of the urine.

When NaCl, failing full excretion, is in part stored up in the tissues, in order to maintain the proper molecular concentration of the tissue juices, a certain amount of water will be likewise retained; in other words, each molecule of salt requires a definite amount of water for its solution, and to maintain this degree of dilution a sufficient amount of water will be kept in the body. French pathologists maintain that when 5 to 6 grammes of NaCl. (one-half the daily excretion) are retained one liter of water will also be held back; this would add two pounds to the patient's weight.

At this rate but a short time would be required for visible œdema to appear. In such cases the withdrawal of salt from the diet has been suggested as a suitable treatment for the œdema dependent upon this chloride retention; the intake of NaCl. being discontinued, its excretion, although diminished, soon brings the quantity of NaCl. within the body down to the normal quantity when the excess of water is discharged and the system is dehydrated.

It is evident that for success the cases should be selected.

Œdema due to the circulatory disturbances associated with heart diseases could not be expected to respond to this dietetic treatment; but cases of œdema, dependent upon such structural changes that, while the chlorides are excreted in diminished amount, yet the kidneys are permeable to liquids, should be amenable to this treatment.

Interstitial nephritis is not prone to be accompanied by dropsy due to the renal disease itself, but when it does occur it is generally due to a failing hypertrophied heart.

It is in the parenchymatous renal degenerations that the most striking results are obtained. Anasarcous pregnant women who have no heart lesions and in whom the uncomplicated pregnancy kid-

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ney is the underlying pathological condition, should be ideal subjects for the "salt free" diet.

This diet embraces the abandonment of salt in the preparation and seasoning of food; because in their natural state most articles of food contain a very small amount of NaCl., this element in the food is practically negligible.

Unsalted bread, unsalted butter, milk, eggs, meats, fowl, fresh water fish, potatoes, rice and sugar are the staple articles.

The popularity of milk as a food in nephritis is now believed to be largely the result of its poverty in chlorides and the resulting dechloridation of the body when it is the sole diet; this diet (milk) in threatened eclampsia is known to be the most successful; milk, however, contains a special diuretic which, as shown by Germain See, is of no mean value: lactose; 100 grammes dissolved in 2 liters of water and taken as the sole drink in 24 hrs., is said by him to have a powerful diuretic effect, but more particularly in cardiac œdemas.

A salt free diet soon becomes disliked owing to its lack of seasoning. Sodium *nitrate* can be used as a substitute for the seasoning property of salt, 3ss being allowed in 24 hrs. It should not be used in the preparation of food, owing to the possibility of its conversion into the *nitrite,* a different agent altogether, which, by the way, is a valuable hypotensive drug in doses from 1-2 to 3 grains; if scattered over the food at the time of eating this danger is eliminated.

Withholding added salt enables us to secure any degree of dechloridation. Salt is a proximate principle and is essential to proper nutrition. If its elimination from the diet is not followed by reduction in the weight of the body it should not be withheld indefinitely. When the œdema has disappeared it can be cautiously added again to the diet, checking the quantity by the behavior of the weight of the body and the reappearance of the œdema; the use of scales, unattainable except in hospital practice, enables one to keep tab on the effect of chloride retention and to foretell the reappearance of œdema by the increasing weight of the body.

I have a few times resorted to this "salt free" diet, but unavailingly; they were badly selected cases, the terminal stage of combined renal and cardiac disease in which nothing postponed the inevitable.

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REPORT OF THE

SECTION OF MATERIA MEDICA.

Lycopodium Clavatum, by M. M. Fleagle, M. D.
The Nosodes, by G. M. Cooper, M. D.
The Meeting of the State Homœopathic Medical Society in the Materia Medica Woods; a Character Sketch, by Frederica E. Gladwin, M. D.
Characteristics of Opium, by Julia C. Loos, M. D.

LYCOPODIUM CLAVATUM.

M. M. FLEAGLE, M. D., HANOVER.

Lycopodium might truly be called the Atlas of Homœopathy, for upon its shoulders rests one of the most complete and convincing proofs of the theory and law of homœopathic practice. Disprove the action of Lycopodium and you destroy with one fell stroke the truth of the law of dynamization, and the whole superstructure of the homœopathic materia medica would necessarily fall, and be buried at the very bottom of the ocean of failures and false theories which have marked the history of medicine even down to the present time. Does minute subdivision, either by trituration or dilution, develop any extra medicinal qualities in a drug? Lycopodium stands out conspicuously as one of the proofs that such is the case, which fact represents that wide gulf that separates the two schools of medicine, and which can never be successfully bridged, no matter how assiduously some of our men work for such a therapeutic monstrosity, for, as Dr. Clarke has so well said, "They will make the bridge higher at the homœopathic end, and—facile descensus Averno." Should this professional amalgamation eventually be accomplished, however, we should remember the biological fact that "hermaphrodites are usually short-lived, and always sterile."

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It was Hahnemann who rescued Lycopodium from its ignominious use as a coating for allopathic pills to one of the great polychrests of the homœopathic materia medica. Lycopodium is a long-acting and a deep-acting remedy, and seems particularly adapted to the extremes of life, *i. e.*, the ailments of children and old age. Probably the most difficult thing is to know where to begin in dealing with such an important remedy.

Thus we may say to the oculist that Lycopodium is the chief remedy in hemeralopia (night-blindness), and has probably cured more cases than any or all other remedies in the materia medica, especially when the trouble has been brought on by exposure to strong, bright lights, when the patient has dark spots floating before the eyes; but it is not so much to the specialist as to the general practitioner that my remarks will be directed.

Lycoporium affects the *right* side of the body just as characteristically as Lachesis does the *left*. Most complaints, whether of an inflammatory or catarrhal nature, will invariably show this tendency to be *worse* on the *right* side, or to travel from *right* to *left* when Lycopodium is the remedy. Another prominent characteristic is that most complaints of the Lycopodium patient are worse from 4-8 oclock P. M. Now these things are very peculiar, and I do not know of any philosophy which can explain why any given drug should select a special time or place for its sphere of action, so I leave these things to be explained by those persons who are continually seeking causes for everything in the realms of bacteriology. But some one will say, "I do not believe these things." It is sufficient to say that neither Homœopathy nor any other great thing was ever built by unbelievers. Generally speaking it may be stated that any remedy which, when internally administered, produces a profound action on the skin, must certainly possess great value as a curative agent in disease, acting as it does from center to circumference, which, as you know, is one of Hahnemann's *directions* of cure. Lycopodium does this, for it has a very decided action on the skin. I have cured some of the worst forms of eczema with it.

The eruption may be *dry* or *moist*; if dry, the scales may cover the entire scalp, and from beneath them will ooze a yellowish, watery, or viscid secretion, with a very offensive smell, like foul meat. If the

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eruption be moist, the surfaces will be raw and inflamed looking, sometimes ulcerated, and the offensive odor will be present. The itching is intense, and I have seen patients dig deep holes into the flesh with the finger-nails, causing quite profuse bleeding. Now this itching is worse at night, especially from the warmth of the bed, which is like *Sulphur* and *Mercury*. *Natrum sulph.* also has great itching of the skin, which is worse while the patient is undressing. The only use I know for the crude Lycopodium powder is in chafing of the skin, which condition it will cure very quickly when applied externally.

The Lycopodium eruptions are very apt to *begin* on the *right* side of the body (behind the ears, for instance), or at least be *worse* on the right side.

Another sphere in which Lycopodium has a deep action, is in the gouty or lithæmic patients. We have all met them—the wandering pains, now here, now there, soreness and enlargement of the joints, sensitiveness to cold or to weather changes, sandy deposits in the urine, and when these deposits grow less the joints begin to inflame and enlarge, the pains throughout the body become worse, and the patient is generally miserable, but as soon as the deposit reappears in the urine there is a sense of general relief. There are drawing, aching pains in the lumber region, and the joints become very stiff. The patient moves with difficulty, but these pains are relieved by *warmth* and *motion*.

Most precribers will immediately think of Rhus tox. for such a condition. but Rhus tox. will only help such cases if they are of recent origin; the old chronic cases having those modalities require Lycopodium, as it is capable of going to the bottom of these conditions.

If we have similar modalities, and the case is sycotic, *Thuja* is the remedy. One important characteristic of Lycopodium occurs in the urinary symptoms, viz.: "Copious urination at night, scanty by day. The night urine is of *low sp. gr.*, and the day urine of *high sp, gr.*" Now you all know the diagostic importance of this symptom, as it occurs in Bright's disease, and in Diabetes at certain stages. I firmly believe that there is a stage in both of these disease when Lycopodium will step in as a curative remedy. One note of warning: It is a very dangerous thing to try to remove

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the sandy deposits from the urine of a gouty patient, unless the whole system is turned into order by the curative remedy. The gouty deposits will cease, but sugar will almost certainly appear in the urine, or calculi will form in the kidneys.

Another symptom that I have found of great value in prescribing is: "Pain in the back, relieved by urination." I believe only one other remedy has it, viz.: Medorrhinum; I have made dozens of cures on this symptom. In little children you find the symptom occurring like this: "The child cries before urinating." If in addition to this you find red sand on the diaper, or even a reddish stain, you may give Lycopodium with every confidence of curing your patient.

Lycopodium is one of my main-stays in *renal calculus;* it should here be compared with Berb. vulg., and Thlaspi bursa. We can also see how Lycopodium may be very useful in the symptoms arising from *vesical* calculus.

Another use that I make of Lycopodium is in pneumonia of children, in which either the case continues to grow worse, notwithstanding well selected remedies, or had been allowed to go on without medical aid until conditions became serious. A more unpromising case than such a Lycopodium picture, I cannot well conceive. As you enter the room probably the first thing to attract your attention is the rapid and labored breathing; every muscle of respiration seems to be working to the limit; the alæ nasi have a "fan-like" motion even more rapid than the respirations. The child lies with his eyes half closed, the face is pale and drawn, there may be hectic flush on one cheek, the forehead is wrinkled, bluish rings around the eyes, the lips are dry, the tongue may also be dry, and there is a bluish-white color of the skin around the mouth. Emaciation is extreme, especially of the face, neck and upper extremities. The chest seems to be completely filled with mucus, even as if the whole parenchyma of the lung were softened (compare Ant. tart.). I have seen Lycopodium come in as a life saver in several cases when the above conditions were present. There are cases of pneumonia in which the mental state of the patient leads to the remedy. The child wakens extremely cross and irritable, striking at those around it, kicking off the cover, screaming, and making itself generally disagreeable. The child awakens as if frightened

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(compare also Cuprum, Bell., Stram., and Zincum). Lycopodium is also a useful remedy in Phthisis Pulmonalis, especially when it is the result of neglected or maltreated pneumonia. "Emaciation beginning in the upper part of the body, and extending downward," seems to be characteristic of Lycopodium in lung troubles. We must here compare *Natr. mur.*, which also has emaciation beginning above and extending downward (Arg. nitr. has the reverse). Another point that may be brought out at this time is this: When you have a boy with a dry, hacking cough, who is very much emaciated, who shuns his companions, and who has a sort of "hang-dog" look about him, you may almost certainly suspect him of practicing secret vices to excess, and Lycopodium will give you excellent results.

The stomach and bowel symptoms of Lycopodium are quite prominent. Lycopodium belongs to a group of flatulent remedies of which *China, Carbo* veg. and Arg. nitr. are also prominent members.

Nash says, in differentiating these remedies, that: "*China* bloats the whole abdomen; *Carbo veg.* prefers the *upper,* and Lycopodium the *lower abdomen.*" Also, that "the flatulence of Lycopodium is usually associated with some chronic liver trouble." This latter observation has been frequently confirmed in my experience with the drug.

Further points in differentiating the foregoing drugs are these: In *Arg. nitr.* the eructations are very violent, rushing out with a loud noise which can be heard over the whole house, but afford *no relief* to the patient. In *Carbo veg.* distention is great and eructations *relieve.* In *China* the eructations not only *do not relieve* the patient, but seem to aggravate his symptoms. In Lycopodium the patient gets no relief from passing gas upward or downward.

A symptom upon which many prescriptions have been based is, the patient has an entire lack of appetite, or has a desire for food, but the *first mouthful fills him up,* as it were, causing a sense of satiety, and he can eat nothing more. We must remember that Lycopodium has an opposite state also, viz., the patient has a ravenous hunger, especially at night; must get up at night and get something to eat. Canine hunger, his head aches if he does not eat. The eructations of Lycopodium are *sour,* rising from the stomach to the throat, and are so acrid that the burning sensation remains for hours afterward.

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Many articles of food disagree with the Lycopodium patient, but I wish to call your attention especially to two.

Do not allow any patient who is taking Lycopodium to eat either onions, (Thuja), or oysters, for they will surely hinder the cure as well as cause a lot of trouble for yourself and patient. Idiosyncrasies are rather hard to explain, so I will not attempt to do so.

One practical point is, that you will often find persons who, upon eating oysters too early in the season, in hot weather, will come down with a violent diarrhœa, and vomiting, with severe crampy pains in the bowels; there is probably no better remedy for this condition than *Aloes,* but when the patient gets sick every time he eats oysters, the remedy is *Lycopodium.* We might say, therefore, that sickness from eating *oysters in season* calls for *Lycopodium,* and sickness from eating *oysters out of season,* Aloes.

Another symptom which sometimes leads to Lycopodium as the remedy is: "Sensation of constriction, or as if a cord marked the diaphragmatic attachments" (compare Ars., Alumina, Cactus grand., and Arg. nitr.). As might be expected from the action of Lycopodium on the liver, it has great constipation, but the symptom I wish to call your attention to, is: "Ineffectual urging from spasmodic constriction of the sphincter ani, preventing stool." This symptom I have most frequently found in women of a highly neurotic temperament, and I have cured it with Ignatia, Sepia, and Natr. mur., but you see that Lycopodium has it also. The Lycopodium patient suffers from headaches. If he goes beyond his accustomed meal-time, on comes a headache. In headaches with *hunger* compare: Psorinum, Phos., and Cactus grand. The Lycopodium headache is *relieved* by *taking off the hat,* showing the aggravation from *warmth* (compare Glon., Ledum), while *Silicea,* another great headache remedy, is *better from covering up the head.*

Lycopodium is sometimes indicated in diphtheria. It corresponds to very severe cases, in fact, just as low a zymotic state as Lachesis. The trouble usually begins on the right side, and travels toward the left, and the symptoms are *ameliorated by warm drinks.* This is directly *opposite* to Lachesis, whose symptoms begin on the left side of the throat, and go toward the right, and are decidedly *aggravated from warm drinks.*

The mental and nervous symptoms of Lycopodium present some

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peculiarities. The Lycopodium patient is avaricious, hence Lycopodium might be a good remedy for misers. Very sensitve to sudden noises, as the slamming of a door. or the ringing of a bell (Natr. mur.), and the patient wrinkles his face. There is also much twitching of the muscles of the face. The patient wrinkles his forehead, especially in diseases of the chest (Pneumonia), but if we find this same symptoms in brain troubles, I always think of *Stramonium.* The Lycopodium patient is a very fearful and apprehensive person; fear when alone (compare Ars., Phos., and Bismuth), but also the opposite state, *i. e.,* wants to be alone, "Dread of men," the text says. "Very sensitive, even cries when thanked." The Lycopodium patient may also be very sad and melancholy, and the text says, "Satiety of life, particularly morning in bed—wants to die." We find this patient also very tearful, like Puls., but unlike Puls., the Lycopodium patient scolds, is extremely irritable, and imperious in her manner. You will note that many of the Lycopodium symptoms are worse after sleep (Lachesis). There is mental feebleness, and confusion of mind; uses wrong words, or omits parts of words when writing—threatened paralysis of the brain. Now you see that we have a fairly good image of what occurs in old people, or in one prematurely old, when softening of the brain is threatened.

Lycopodium causes *burning* in the spine from the base of the brain to the coccyx, and this burning is worse when the patient *lies down;* wants some one to fan his back, it feels so hot.

Now *Phos.* has burning all the way down the spine also, but is worse when the patient *moves.* Another peculiar symptom found under Lycopodium is, milk in the breasts of young girls, and in boys. "Burning and stinging in the mammary glands" (compare Apis, Carbo an., Phos., and Laurocerasus).

In recapitulation, we may characterize the action of Lycopodium in one word—WEAKNESS. Weakness from top to bottom; weakness *worse* on the *righ side* of the body. The symptoms of Lycopodium are aggravated principally from *4 to 8 P.* M., and many symptoms are worse after sleep (Lachesis). Lycopodium has aggravation from a warm room and we ought to compare *Puls.,* and *Apis mel.* All these remedies have also *evening aggravations:*—Apis mel.—the symptoms are worse from 3 P. M. until late in the

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evening; Lycopodium: worse from 4 to 8 P. M., and Puls. also has evening aggravation of many of its symptoms.

Puls. and Apis are characteristically *thirstless* remedies, while Lyc. also has the symptom, or thirst with disgust for drink, *i. e.*, a few mouthfuls fill him up.

The inflammatory states of the throat and stomach are *relieved* by *warm drinks*, (Ars.). The headaches are worse from warmth, as are also the skin symptoms. Now, as to the general appearance of the Lycopodium patient, I have most success when I have a thin, emaciated person, of dark complexion, dark hair and eyes, who is morose, melancholy, and very irritable, or I should perhaps say very sensitive as to his disposition; brown spots on the skin; much accumulation of gas with distention of the abdomen, and sour eructations.

The text says that Lycopodium is complementary to *Iodine*, and I would think it should be complementary also to *Lachesis*.

When we see the marked emaciation, the ravenous hunger, the dark complexion, the aggravation from warmth, etc., of Iodine, we can readily see the similarity of action in these two remedies.

Lycopodium belongs to a trio of remedies which follow each other well, especially when given in the order named, *i. e.*, Sulph., Calc. carb., and Lycopodium. These drugs should not be given in a routine way, but prescribed according to indications. Other groups which follow each other well may be named as for instance: Puls., Silicea, and Fluoric ac., or Arnica(Rhus tox., and Calc. carb.

Thus we see that some remedies seem to follow each other quite naturally, and with better effect than if the order were changed. Herein lies one of the successes in prescribing, for we may readily interrupt the action of the properly selected remedy, and hinder the cure, by prescribing a remedy out of its natural order or sequence.

Several years ago I presented a paper on Lachesis to this Society in which I treated of the *left side* of the body, and I have taken this opportunity to present the *right side*—Lycopodium, for I can assure you, my friends, that success in medicine, as well as in other walks of life, depends very much upon the *side* from which you approach it. If from the side of *skepticism*, then the dark clouds of failure and despair will hang heavy upon your pathway, but if from the side of *belief*, then will the golden sunshine of truth enlighten your pathway even to the highest pinnacle of success.

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DISCUSSION.

DR. H. R. EDWARDS: I would like to mention one fact that interests me, and that is that when Lycopodium ceases to act, bacillinum in the thirtieth potency acts wonderfully as an intercurrent. After a few doses go back to Lycopodium, and you will get good results. Bacillinum acts as well on the right side as on the loft.

DR. T. H. CARMICHAEL: Away back in 1886 Professor A. S. Smith, while lecturing on remedies for gastric diseases, said, "There is a medicine which I must mention, one which homœopathists use in troubles from indigestion in which the patient complains of feeling full after eating a few mouthfuls of food; the symptoms are worse in the afternoon. I prescribe it very frequently and think a great deal of it.

DR. J. J. TULLER: In the true neurasthenic state when the abdominal symptoms of Lycopodium predominate and are associated with dulness of memory, inability to concentrate the mind, loss of consecutive thought with pressure in the head.tenderness at base of the brain and down the back of neck; these symptoms are often found in neurasthenia, and if they are associated with the abdominal symptoms of Lycopodium, they are, as a rule, very much relieved by the remedy Lycopodium. An exact counterpart of this picture can be reproduced in a hysteric, and there you can pour Lycodopium in by the barrel and it will prove to be absolutely useless; this not only applies to Lycopodium but to every other remedy of this character. Lycopodium, however, is a very useful medicament when it is properly and systematically prescribed.

THE NOSODES.

GEORGE M. COOPER, M. D., PHILADELPHIA.

The medical world is in a state of unrest, the spirit of revolution invades the ranks of all schools devoted to the art of healing. Dissatisfaction with existing therapeutic methods is everywhere apparent. Physicians in every land are active in their efforts to find

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the secret of disease and the means whereby it may be banished. Consequently new systems of cure are being made and unmade almost within the rising and the setting of the sun.

These turbulent times are not without their effect upon the homœopathic school. The law of *"similia"* is being questioned, and the use of potentized drugs abandoned. Hahnemann is no longer regarded as worthy of emulation. The eternal principles of cure first formulated by him will soon be regarded as one of the curiosities of medicine, if the insane desire of the modern physician to worship strange gods be not checked.

The calm judgment of the more temperate members of our school must prevail in this crisis. Without their firm and strong arm Homœopathy will suffer dissolution. The weaklings in our body have themselves to blame for the recent attacks of the dominant school of medicine. By seeking the favor of the old school they have rendered themselves vulnerable to assault and now fear comes upon them lest they be assimilated by it.

The truth, however, must ultimately triumph, and although we may for a time suffer sore trials, in the end there will be a return to the original tenets of our medical faith and our cherished *law* will again shine with the power of truth as in the days of old.

The homœopathic law of cure will meet with universal recognition at some future day. It is unreasonable to expect that it will forver remain hidden to all but those of the new school. The stupendous work being done to reveal the nature of disease and its cure must in time bear fruit, and when the harvest comes the laborers will find themselves gathered in the same vineyard.

What now seems the particular property of Homœopathy will inevitably become the common possession of all truth seekers. We must acknowledge this fact and judge of the achievements of modern medical investigation from this standpoint. Let us not discredit recent discoveries because they have not taken place in our own workshops. The gleam of truth may occasionally be seen in the laboratory of any school of medicine. This is no excuse for relinquishing the distinctiveness of our own school. Homœopathy stands for a distinct principle of truth in therapeutics, and its adherents should never waver in their battle for recognition as a body

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with a specific reason for existence. In the union of our forces lies untold power. We must keep alive the name of him who first formulated and brought into practical use the law of *"similia,"* which law since the beginning of medicine has invariably operated in any cure. We must honor the memory of those who since the time of Hahnemann, through many years of medical despotism and therapeutic decay, have kept alive this system of medicine. If we stand mutely by then other schools of mediciae, active in their search for truth, will discover and claim credit for what we so freely proclaim; thus the founder of Homœopathy and its faithful promulgators will be robbed of their birthright, and the fault lies at our door.

Let us read the signs of the time and see to what extent this is now taking place. The trend of modern medical thought is unmistakable. Serum therapy is in the lead, and homœopathic practitioners are willingly deserting their time-proven remedies to substitute newer, uncertain methods, born of laboratory experience. The desire to imitate that school, which is a power in medicine at the present day, commanding legislatures and gold, is so strong that many of our best men are blinded and fail to interpret the action of the serums; to see in them a crude illustration of the law which they are deserting. Since the first days of physic no other law than the one we stand by has ever been a factor in the cure of disease. No other law has ever restored health according to well defined order and progression. No other law has ever caused the disease to turn back upon itself, and the signs and symptoms of the disorder to disappear *from above downwards, from within outwards and in the reverse order of their appearance.* A disappearance of the evident signs of the disease in any other way is not a *cure* but a natural recovery due to an inherent power in all living creatures to restore order where there is disorder.

When, therefore, under the influence of one of the serums or antitoxins the symptoms of the disease disappear according to the order of cure stated, it is because such serum or antitoxin bears a homœopathic relation to that disease. Their favorable action can be explained in no other way. Insurmountable difficulties present themselves, however, when we attempt to bend the homœopathic law to conform with modern serum therapy. For example, the dose is

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found inimical with that repeatedly proven conducive to health. Homœopathic practice requires the smallest possible portion of the drug found to be effective in a cure, and this is shown to be of an infinitesimal measure. In the administration of the serums the largest dose admissible is frequently advised.

Again, the selection of the curative homœopathic remedy is a matter of accurate individualization but the choice of a serum or antitoxin is a matter of gross routinism, entirely inconsistent with our established practice.

Why should we attempt to surmount these difficulties and put into practice that which is still in a stae of uncertainty, and in its application fundamentally at variance with general laws of truth recognized by reason and common perception, when we have something far better in our own school? I refer to the *nosodes* corresponding to the serums of modern practice, remedies time-tried and well proven, but neglected and forgotten by the majority of homœopathic practitioners. Those who have used them, selecting them with care as to similarity and dose, unanimously testify to their power in overcoming disorders of a most malignant and insidious nature. In general they are found to be of particular value in the same general class of diseases now being treated with the serums and antitoxins. If the physician supplies himself with such remedies as Pyrogen, Tuberculinum, Diphtherinum, Medorrhinum, Syphilinum, Psorinum, Variolinum, etc., and applies them according to the well known laws of Homœopathy, he will find greater success following this practice than would be the case were he to call to his aid the numerous modern vaccines, antitoxins and serums, introduced to the profession generally through pharmaceutical supply houses.

If the homœopathic school as assiduously studied the provings of the nosodes as they now do the clinical reports of up-to-date medicine, they would find a power for untold good revealed to them. They would discover the key to the treatment of a class of diseases that has heretofore proven stubborn and unsatisfactory.

The nosodes seem to have a peculiar sphere of action. The diseases commonly known as the "germ diseases" come particularly under their influences, although the treatment of these diseases is

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by no means limited to the nosodes. In general it might be said that whenever the distinct individuality of the patient rules or is uppermost in the disordered organism then any remedy, mineral, vegetable or animal, corresponding in its proving to the peculiar symptom complex may be the one indicated. But when the disease dominates in the individual to such an extent that the vital characteristics of the patient are smothered and held in subjection, then the nosode corresponding to that disease is most successfully exhibited.

It is common experience to be called to a case of diphtheria and find the patient so thoroughly under the influence of the malignant poison associated with that disease, that the symptom image is blotted out and nothing remains to guide us in the selection of the similar remedy. Here the use of Diphtherinum is strongly indicated, and it is because of the fact that it is the product of the very poison that is snuffing out the life of the patient that it is potent to restore health.

The law of *"similia"* must, however, always guide us in the administration of the nosodes. Their symptom picture, more than that of other remedies in our materia medica, presents the pathognomonic signs and symptoms of the disease of which they are a product, and for this reason they are capable of covering very general states in sickness, conditions where but little more than the most common symptoms of the disease are evident.

If the use of the nosodes be determined in any other way than according to the well known proven homœopathic law, then routinism, with its uncertain results, is soon the practice.

The provings of many of the nosodes are very complete, and we find that in their finer images they possess an individuality adjusting them to the peculiar phases of disease, but always with a basis corresponding to the miasm from which they are prepared.

A vast field opens before us, and it would seem that in this era of medical chaos and uncertainty the Homœopath of all others should step into the breach and declare for that which is legitimately his own by right of discovery. Let the name of Hahnemann be restored to its lawful place in medicine, and let us judge of all future investigations in therapeutics from the standpoint of "similia" which we acknowledge to be the only law of practice.

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DISCUSSION.

DR. JULIA C. LOOS: It is often stated by those who are supposed to be practicing Homœopathy that in serious cases you must use something that will work very quickly, and there seems to be an idea that the hypodermic needle put under the skin will give a better action than medicine put on the tongue. To demonstrate the rapidity with which the nosodes will act I would like to cite a case which was treated by me last January. A case with unmistakable symptoms of appendicitis. I did not have the medicines with me that I wanted, but I sent out in the neighborhood to see if I could get any Pyrogen 30th; the symptoms at that time were most serious and alarming, unmistakable evidence of disease in the appendiceal region, chills and fever, the particular characteristics of Pyrogen, rapid pulse and respiration. The patient was given one-half dozen pellets, 30x, and the change in one and one-half hours could not be mistaken by anyone who had seen the case before. It acted better than an absolute narcotic. All the symptoms were gone. The patient before had been unable to sleep and was suffering intensely; these half dozen doses did the work. After the Pyrogen had been administered the patient had a continuous evacuation of flatus, and within two hours an evacuation of watery fluid from the rectum, which continued for two or three days, and at the end of that time the bowels were normal. You cannot ask for anything more rapid or satisfactory. Every function was increased to its normal action.

DR. FREDERICA E. GLADWIN: I had a case with brain fever, and during the convalescence the patient took a sudden cold, and as a result a lump appeared in the abdomen. For twelve years after that every time she took a cold this lump came back, but each time the homœopathic remedy caused it to disappear. The last time it came back we opened the lump and then put in some absorbent gauze for a drain. The first day the discharge was nearly all pus, the second day there was a discharge or half a cup full, but this was more than half blood, and the patient was in a much worse condition than before the abscess was lanced; the next day we took out the gauze drain and that day we had about a teaspoonful of pure blood; the patient had aching, chills, rapid pulse and was very restless, pains

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in the abdomen and a yellow complexion. I gave Pyrogen, and at this time the wound was discharging pure pus, the aches and pains disappeared. The patient went along getting better all the time. The dose of Pyrogen was repeated. Next we gave Tuberculinum, and the patient improved on this until she called herself well.

DR. RICHARD BLACKMORE: A little while ago I had a number of cases of diphtheria and in the treatment of these I gave different remedies. Two or three cases had peculiar symptoms that looked like syphilinum; two of these cases got one dose and one got two doses. Variolinum I have given along with Vaccininum. I have used Tuberculinum, but I have not had much opportunity of judging of its efficacy. I recall one case in my undergraduate days that had been given everything without success until Tuberculinum was studied up. The patient got Tuberculinum, and what looked to be the case for the undertaker, turned out to be something else. Bacillinum I have not used very much. I would not feel that I had a complete medicine case without the nosodes.

THE MEETING OF THE STATE HOMŒOPATHIC SOCIETY IN THE MATERIA MEDICA WOODS.

A Character Sketch.

FREDERICA E. GLADWIN, M. D., H. M., PHILADELPHIA

The State Homœopathic Society, being wearied by its annual repetition of city meetings, decided to celebrate its two hundredth anniversary by convening in the Materia Medica Woods.

When the day arrived, absent-minded Dr. Rhus Tox. climbed upon a stone wall and immediately forgot why he climbed there. Dr. Ranunculus Bulbosus, who could never stand changes of temperature donned her yellow picture hat and sat protected in the grass at his feet. A little farther on at the edge of the woods stood the changeable Dr. Pulsatilla, guarded by Dr. Lycopodium, her knight good and true, while old Dr. Silicea, well wrapped to keep himself warm, leaned against the wall near by, and all awaited with different degrees of patience, the train which should bring their

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medical brethern to this, their first convention in the Materia Medica Woods.

At length the whistle sounded. Dr. Rhus Tox. stiffly climbed from his elevated position, placed his hands upon his back and with a wry face, slowly assumed an erect posture and hobbled off toward the station. Dr. Ranunculus Bulbosus, who hated to move and couldn't even bear to change her position, carefully readjusted her hat and sat still in the grass awaiting the appearance of the crowd. Dr. Pulsatilla started for the station, then changed her mind and went back, then changed her mind again and started on. Then she began to cry for no reason at all and didn't know what to do until Dr. Lycopodium took off his hat—Dr. Lycopodium always felt better from uncovering his head—and offered her his right arm and led her forward to meet the oncoming friends.

Dr. Silicea had been a stonecutter in his early days, but the work didn't agree with him so he studied medicine. He was a queer old fellow, always chilly and the changes of the weather always found him complaining. He had a habit, with reason, of washing his feet at every opportunity and he was noted for going into fits at the new of the moon. Dr. Silicea didn't care to move, so remained with Dr. Ranunculus Bulbosus.

The train stopped and doctors by the hundred alighted. Dr. Rhus Tox. soon found his old classmate and chum, Dr. Bryonia, and they walked together from the station. Dr. Rhus Tox. grew better every step of the way, but with every step Dr. Bryonia grew worse. Dr. Rhus Tox. gradually lost the stiffness from his lumbar region and Dr. Bryonia just as gradually developed a stiffness in the lumbar region, until by the time they reached the woods Dr. Bryonia could hardly move for the pain and stiffness and Dr. Rhus Tox. was as lively and limber as any young graduate. Dr. Rhus Tox. soon found a mossy bank for Dr. Bryonia to recline upon while he himself sat upon the swinging branch of a tree where he could keep himself in motion as he talked and so prevent the stiffness returning to his muscles.

The assembly having reached the woods, Dr. Rhododendron, the weather prophet, perched himself upon the highest crag he could find to watch for storms. Dr. Rhododendron considered himself authority upon the weather. He could predict the approach of a storm long before any one else suspected it. Every one was hun-

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gry by the time the woods were reached, so it was agreed to dine first and have the feast of reason afterward.

Dr. Plumbum was willing to assist in spreading the table but Dr. Sepia, who had taken charge, noticed his wrist drop and he was afraid he would break the dishes, so ordered him to go and rest. Dr. Hydrophobium was asked to take a bucket and go and hunt for a spring of water, but such a look of horror came over his face at the thought of water, that Dr. Natrum Muriaticum went instead. Dr. Natrum Muriaticum's extreme thirst would make him find water if any one could. Hearing a blood-curdling shriek as he was starting out with the bucket, Dr. Natrum Muriaticum followed the sound and found that Dr. Bufo's little boy had discovered the spring for him but had fallen in a fit.

Dr. Lachesis was so hungry she couldn't wait for dinner, so offered to prepare the oysters, thinking to help herself while so doing. Dr. Lachesis was such an inveterate talker that Dr. Sepia didn't want to be bothered with her, so told her that handling oysters would ruin her dinner gown. Dr. Lachesis insisted that all of her gowns should be made decollete, for she could never understand why fashion should dictate those suffocating high collars. Dr. Sulphur was more hungry that Dr. Lachesis, so he said he would open the oysters, for nothing could hurt his clothes, and Dr. Sepia agreed that his clothes were too dirty already to be injured by added dirt. Dr. Carbo Vegetabilis disliked work, but even if she had enjoyed it, she was too timid to offer her assistance, so she sat upon a pile of brushwood and fanned herself. Dr. Calcarea Carbonica, fair, fat and full of anxiety lest the dinner be delayed, hurried up to help, but her exertion immediately brought on palpitation and a profuse prespiration started out all over her so that she had to stop and quiet herself.

Dr. Capsicum, who was very fond of coffee, even though it did nauseate him, took the mill and began to grind the coffee which Dr. Angustura had brought. Dr. Arsenicum, too restless to keep still and glad of a chance to get warm, hastened to build the fire. Dr. Nux Vomica, who never was quite happy unless he was angry about something, looked upon the coffee-making with disapproval. He preferred brandy, but Drs. Hyoscyamus and Rhus Tox., belonging to the Temperance Fraternity, were opposed to alcoholics of all kinds and insisted that none be allowed at the meeting. Dr.

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Calendula, the specialist in lacerated wounds, thought they were paying altogether too much attention to the dinner. He was never hungry, but things tasted all right when he did eat them.

The dinner was finally announced. It was in the nature of a collation, each bringing what food he most enjoyed, and such a collection never appeared at table before. Dr. Calcarea had brought a basket of boiled eggs and raw potaties and wheat. Dr. Calcarea was one of the originators of the raw vegetable diet fad. She even approved of chalk and coal at times. Dr. Mezereum and Dr. Sanicula had brought a nice fat ham, but insisted upon eating all of the fat themselves. Dr. Natrum Muriaticum contributed fish. Dr. Ant. Crudum, he of "ecstatic love in the moonlight" fame, brought pickled cucumbers. Dr. Allium Cepa brought onions, and Dr. Hepar Sulphur furnished the vinegar, and Dr. Natrum Muriaticum furnished the salt for them. Dr. Belladonna was exceedingly fond of lemonade, and as Dr. Arsenicum had brought some lemons, he hunted up Dr. Argentum Nitricum, who had the reputation of being such an inveterate sugar eater that he was always making himself sick by it. Sure enough, Dr. Argentum Nitricum had brought a bag of sugar, so Dr. Belladonna made the lemonade. Dr. Alumina brought rice, but didn't stop to cook it. She was one of the raw diet converts. Dr. Pulsatilla's appetite was so indistinct that she didn't quite know what she did want, so brought nothing at all. Dr. Chamomilla brought sauer krout, and then lost his temper when some one told him he would have the colic if he ate of it. Dr. Magnesia Carbonica brought meat sandwiches, and Dr. Ignatia brought cheese sandwiches. No one living outside of the Materia Medica world will ever know all that was upon that table. An outsider might even wonder why that pile of slate pencils lay beside Dr. Nitric Acid's plate. Just after every one was seated at the table Drs. Calcarea and Phosphorus came bringing the cans of ice cream that had been forgotten.

It was amusing to note how in seating themselves at the table like had attracted like. At the end of the table sat Dr. Symphytum, the noted army surgeon. He really is not so warlike as his name sounds, but he knows all about bruises, sprains, gunshot wounds and fractures, and he can make broken bones grow together when they don't want to. At his right sat little Dr. Calcarea Phosphorica. Dr.

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Calcarea Phosphorica had rachitis as a child, which, being improperly treated, left her with a lateral curvature of the spine; in fact, it left all of her long bones curved also, but in spite of her deformity she is a successful specialist in bone troubles. She can stop the suppuration of bones and joints, and it is said that she can make fractures unite after every one else has failed in the attempt. Next to Dr. Calcarea Phosphorica were the noted surgeons, Drs. Hepar and Silicea. It is said that they can remove foreign bodies from the patient without the use of the knife. Next to Dr. Phosphorus, the great necrosis specialist, were Drs. Arsenicum and Mercurius,' who work along the same line. Dr. Hypericum sat beside Dr. Ledum and discussed punctured wounds, though Dr. Hypericum's province was in wounds where the nerves had been lacerted. Dr. Sulphur, the philosopher, is consulting physician for almost everybody. If anyone has a case that doesn't improve as it should, Dr. Sulphur is called in to help. It is really wonderful how he can help almost everybody. He sat at the table with his grandson, Dr. Nux Vomica, on one side of him, and his grandfather, Psorinum, on the other, forming quite a family party. These three were much interested in diseases that had been suppressed by drugs. Drs. Allium Cepa, Euphrasia and Merc. Cor. attracted much attention by their tears. Dr. Euphrasia and Merc. Cor.'s eyes were red from them, but they were not tears of grief, for Drs. Allium Cepa, Euphrasia and Merc. Cor. were only eye specialists who had taken cold. Drs. Lachesis, Lycopodium, Merc. Jod. Rub. and Merc. Jod. Flav., the throat specialists, sat together and discussed the merits of sore throats that began on the left side or on the right. Drs. Tellurium and Pulsatilla, ear specialists, talked about acrid and bland discharges from the ears. Overworked Dr. Digitalis, the noted heart specialist, had been so extremely busy that he had feared until just before the train started that he would be unable to attend, but there he was with his friends, Dr. Cactus, the grand, and Dr. Kalmia Latifolia and Dr. Spigelia, and all the lesser heart specialists sat near and listened to the words of the big four. Dr. Rhus Tox. left his friend, Dr. Bryonia, for a while, and engaged his enemies, Dr. Anacardium and Dr. Croton Tig., the skin specialists, in a heated discussion in regard to the proper treatment of vesicular eruptions. Dr. Agaricus and Dr. Actea Racemosa, nerve specialists, discussed chorea with

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Dr. Cicuta, who sometimes treated chorea, though he preferred epilepsy. The alienists, Drs. Stramonium, Hyoscyamus and Belladonna, knowing so well the success of Homœopathy in mental diseases, discussed the advisability of urging the society to demand of the state a few more homœopathic insane asylums. Dr. Stannum and Dr. Tuberculinum, lung specialists, agreed that there was altogether too much emphasis placed upon the open air treatment for consumptives. Homœopathy was the proper weapon with which to fight the great white plague, and there was every reason why there should be homœopathic hospitals for the consumptives. On either side of Drs. Sepia and Kreosotum were grouped the specialists in women's diseases, and on either side of Drs. Cannabis Sativa, Nitric Acid and Thuja were the specialists in men's diseases, and so on all down the tables, those in sympathy with each other were gathered together, while here and there was a general practitioner, the good old family doctor, who listened to all the woes of all of his patients and cured them whatever the trouble.

Just as all were seated in rushed Dr. Aconite full of feverish anxiety, and threw himself into a seat beside Dr. Spongia. He had just come from a violent case of croup and wanted to talk it over.

In the midst of the dinner Dr. Colocynthis, who had been exceedingly angry about something a short time before, became doubled up with colic, and Dr. Cuprum assisted him from the table. Just as eevrything was quiet again, Dr. Drosera, who had difficulty in swallowing, was unfortunate enough to have some bread crumbs catch in his throat, after which he kept up an incessant hacking cough, which ended in vomiting.

When dinner was over, Dr. Phosphorus, the toastmaster, arose and called upon Dr. Lachesis to answer the toast "to the ladies." Dr. Lachesis was a proud woman but was fond of talking. She usually went from one subject to another with great rapidity, but for once she kept to her subject. She said she thought women should go into the professions, but they should never marry. If women never married they would never have cause for jealousy and much unnecessary sadness would be left out of their lives, etc. Dr. Phosphorus then called upon Dr. Chamomilla to answer the toast "to the children." Dr. Chamomilla said he didn't agree with Dr. Lachesis, for if the women didn't marry there would be no dear

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little spunky babies that made you walk the floor all night with them when they had the colic. The first sad chord was struck when Dr. Ignatia was called upon to answer for "the absent members." Dr. Ignatia was highly sensitive and conscientious and when she spoke of those who would never again meet with the State Society, Dr. Natrum Muriaticum, Dr. Pulsatilla and several others had to get their handkerchiefs to wipe away their tears.

I would like to tell you how Dr. Sulphur responded to the toast, "The passing of the general practitioner," and how Dr. Chininum Sulphuricum responded to "Homœopathy." I would like to tell you about Dr. Malandrinum's paper on "Vaccination" and the discussion it brought forth. I would like to tell about all of the other papers that were read at that meeting, but time forbids. Therefore I will leave you to meet again next year in the Materia Medica Woods of Pennsylvania.

DISCUSSION.

DR. JULIA C. LOOS: The way in which Dr. Gladwin has presented this paper makes it scarcely amenable to discussion. By observing sick patients and their ordinary habits we are able to detect guiding symptoms for a remedy. Very often they will tell more when off their guard. We should see the patients in their own homes; here we often find more than when they are in the office or when making examinations,—that is one point which Doctor Gladwin has brought out in her paper.

CHARACTERISTICS OF OPIUM.

JULIA C. LOOS, M. D., H. M., HARRISBURG.

The Homœopathic prescription is based upon the symptoms, strange, rare and peculiar, in the individual patient and in the remedies. The peculiar symptoms in the patient are those distinguished from the ordinary symptoms, from the common features, of the dis-

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order which he suffers. The peculiar symptoms of the remedy are those which distinguish it from all other remedies, even from those most similar, in their effects.

One very strong hindrance to prescribing the Homœopathic remedy is the difficulty in perceiving the peculiar, characteristic symptoms of the patient, selecting them from all those gleaned from the patient's and the attendant's reports and the personal observation of the doctor. From all the pains, modalities, tissue alterations, desires and aversions, notions and functional derangements, to select those that especially mark the individual case, that sketch the image of the disordered individual, and hence the image of the remedy needed for his cure, is one of the fine arts to which the homœopath is trained. No difference how carefully the remedies are prepared, nor how accurately their keynotes be memorized, without this training, they cannot be used successfully, either in high or low potency.

To the mind imbued with the desire to explain all symptoms in a so-called scientific diagnosis, satisfied to determine localized congestion or inflammation, somewhere, a particular blood alteration, or other tissue change, some particular diathesis or mechanical or chemical irritation; to such the search for the characteristic features is almost impossible. From such a point of view it is most difficult to accept the strange desires and circumstantial influences as anything but whims or notions of the patient, to be ignored or controlled by his own will.

Acquaintance with a remedy includes familiarity with its entire nature, especially the characteristics by which it is distinguished from all other remedies, even those most similar. Some remedies are characterized by the selection of certain tissues for their influence. Bryonia acts especially on fibrous tissue, belladonna, on the vascular system. In some remedies, the mental sphere expresses the peculiar features as exemplified in the anxiety of arsenicum and aconite, the tearfulness and depression of pulsatilla. The pace of action in addition to rapidity.

In some remedies the characteristics are found in modalities, *e. g.*, bryonia aggravation from motion, nux aggravation from noise, time aggravation of lycopodium, and kali carb. Some peculiarities are expressed in the painful senstions, as the burning of arsenicum, the stitching of kali carb., the pricking of nitric acid and hepar sulph. In some remedies the concomitants, apparently unrelated to the most

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troublesome or pathological symptoms, prove the characterizing tone, as in zinc, the fidgety feet and in rhus, the nightly restlessness.

In the OPIUM patient, the following characteristics portray the nature of the remedy, sketch its image, in the proving and in the suffering patient who applies for relief and cure of varied disorders, of easy or difficult diagnosis.

LACK OF IRRITABILITY is a prominent feature of Opium. He suffers slightly or no pain from many complaints usually painful. Ulcers, inflammation, even suppuration in various parts, are peculiarly devoid of pain. The nerves are not sensitive, do not respond to the stimuli, as normally. With this there may be definite, functional inactivity, with the organs in a do-nothing condition. Parturition pains cease, contents of bladder are retained, digestion fails, yet no pain is experienced therewith. Remedies, selected according to apparent leading symptoms, do not arouse reaction. This torpor extends also to the mental sphere, occasioning deception in taste, touch and other senses, lack of realization of surroundings, perversion of senses. A sort of mental and physical numbness exists.

Sluggishness and painlessness are most prominent, but there is also an oversensitiveness in special senses. Hearing is accentuated, small sounds being distinct and exaggerated. There is sensitiveness to light and odors.

Drowsiness is another prominent characteristic. However the individual may explain it, however much he may rest and sleep with, whatever he does he is sleepy and sleeps easily when normally expected to be awake. The parturient woman sleeps in the midst of her expulsive pains; the worker dozes at his occupation; the housewife sleeps when sitting; the child sleeps when nothing has occasioned fatigue. Unnecessary and unaccountable sleepiness with any complaints, even when pain is present, is remarkable.

There is in Opium also a sleeplessness quite as unaccountable. With all surroundings conducive to sleep, in the midst of fatigue, with no exacting influences, she cannot sleep. Night after night she retires and remains awake or sleeps lightly with long wakeful intervals.

The vascular system is burdened by continued congestions. Internal and external congestions exist. The face is besotted, flushed, bloated, the brain is engorged as expressed in all the symptoms of

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mental stupor and cerebral pressure. The apoplectic condition is presented, and in the event of clot formation the usual paralytic symptoms supervene.

Paralytic conditions form another prominent feature of this remedy, manifested in the overaction or weakness of sphincters, the inactivity of abdominal organs. In spite of most concentrated voluntary efforts evacuations are retained, with sensation of closure of the rectum. After long periods of no inclination, or long-continued straining, there is evacuated a single, hard, large, dark ball of fæces, the characteristic Opium evacuation. This tendency is expressed also in paralysis of the tongue, difficult articulation and other paralyses.

The mental sphere expresses a strong characteristic in susceptibility to emotional excitement. Complaints of various sorts result from excessive joy, anger, shame and especially from fright.

Headache and other congestions, spasms or other manifestations may develop, but the most peculiar symptom is the persistence of the sensation of fear, remaining after the occurrence of that which has occasioned the fright. The fear of the fright remains.

There is a strong tendency to spasms in this image. There are twitching, trembling, spasms of one part of the body, cerebro-spinal spasms, worse from heat, either warm air or hot bath, epileptiform or true epileptic spasms. Spasms occur frequently during sleep, when the victims are unconscious of their occurrence. During or after the spasm purple-red flush of skin, dotted with bright red spots, on swollen, distorted face. Spasms from fright or emotional excitement, from shock or injury.

With these symptoms or any complaints there is aggravation from heat. Complaints develop from heat. Patients averse to heat with desire for cool air and cold applications. Perhaps the most painful condition of Opium is the intense intestinal pain, griping, cutting, squeezing, spasmodic pain, resembling the poison effects of lead, for which it is an antidote.

Much more is to be said of the detailed symptoms of this valuable remedy, but mingled with them will be found the strong characteristics mentioned. In an array of symptoms that we fail to recognize as any definite image some one of these features may stand prominent and direct the attention to this remedy, when further study re-

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veals that the entire symptom sketch is harmoniously similar and use of the remedy eradicates all the troublesome condition with its symptoms, major and minor.

Opium is said to be especially suited to the aged and the very young, because in these periods the Opium conditions are prone to develop.

The mal-nutrition, known as marasmus, and the spasms of childhood sometimes take on this form, manifesting these characteristics. In advanced life the vascular weakness affords opportunity for congestive conditions with apoplectic manifestations. In the middle aged as in the very old, when the peculiar symptoms are present, this remedy has promptly effected reaction, relieving the cerebral congestion within an hour and restoring normal activity within a few days, leaving practically no trace of the distressing appearance present at the time of its administration.

There is, however, no limitation that shall exclude it from the needs of those in any period of life. When, during parturition, a period is reached when nothing appears to be accomplished, delivery is delayed and the woman has no complaints and expresses no desires, except perhaps to sleep, this remedy in potency arouses reaction, delivery is properly completed, the retained fæces and urine are evacuated, and activities are restored even to natural expulsion of placenta and membranes, without mechanical interference.

The patient with unmistakable symptoms of brain involvement, too weak to rise unaided from the pillow, helpless and without ambition or pain, temperature ranging from 100°-103°, sleepless, with ugly visions or dozing intermittently with characteristic Opium rectal evacuations will be started on the road to perfect recovery by the use of this potentized remedy, even after days of unsuccessful use of only partially indicated remedies.

The patient, suffering recurrent headaches for years after fright, in whom the old fear returns with the pain, associated with mental depression, will be released not only from the fear but the periodic headache and all other concomitant troubles after receiving a few doses of Opium.

The intense inflammation, such as occurs in felons or other suppurations that involve increasing areas of tissue, when accompanied by the drowsiness, the relief from cold applications or absence of

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pain even on pressure, calls not for surgical interference and bacterial antiseptics but demands Opium, under whose influence the violent inflammation and suppuration are checked, the part healed and the patient generally improved more worthily than by any injections to raise the theoretical opsonic index.

When in the absence of menstruation, the girl in her teens is seized during sleep by epileptiform spasms whose stertorous respiration rouses the household, calling the members to aid the unconscious victim, these seizures are checked and the pelvic function is restored with general order, by Opium, when the characteristics are present.

Whatever the condition, with these guiding symptoms, Opium is needed to start the curative action in the patient, manifestly improved in every way by its use. Thus it is evident that in the hands of the Homœopath, who can perceive its guiding symptoms, Opium is a most valuable curative agent, when indicated. In its crude forms, as a narcotic, it but destroys the opportunity of the doctor to detect the needed remedy image and abuses the economy by forcing the disorder more internally while it hushes the natural expressions of that disorder.

DISCUSSION.

DR. RICHARD BLACKMORE: A couple of years ago I had an experience with Opium in a case of eclampsia, it was a case that I feared for very greatly. The labor was one of the easiest that I had ever seen. I saw the attack at 6 P. M., at which time the symptoms looked like Opium. I gave a dose of Opium and watched for results. At 8 the people in the house were getting nervous, and sent for an old school doctor. I told him not to interfere with the dose of Opium which I had given. The next morning the patient was very much better. A single dose brought back the patient which, one might say, was dead.

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REPORT OF THE

SECTION OF GYNÆCOLOGY.

Advice to Girls at Puberty, by D. C. Kline, M. D.
The Role of Vascular Disease in Gynæcology, by N. S. Betts, M. D.
Ectopic Pregnancy, by N. F. Lane, M. D.
Menorrhagia, by R. L. Piper, M. D.
Curetting the Uterus, by C. M. Rhodes, M. D.
Lachesis in Disease of the Left Ovary, by A. C. Shute, M. D.

ADVICE TO GIRLS AT PUBERTY.

D. C. KLINE, M. D., READING.

Only a few of the stronger trees in the forests stand upright and straight, refusing to succumb to the severe storms, the majority go down. Thus with humanity. Of the thousands born into the world annually only a comparatively small proportion fully and properly mature. The majority go down at some stage of the developing process, and from observations it would appear that the period of puberty in young girls is a time when nature frequently succumbs to the physical storms, or at least begins to break.

The cry of the present day is for preventive medicine. This role is being assumed by the physician more than ever before, hence it would seem that the gynæcologist, as well also as the general physician, would do well to begin his professional work with the young girl, by giving her wholesome and helpful advice; thus, in many instances, she could be saved a breakdown and thus avoid giving up her generative organs to the surgeon.

Judgment must be exercised as to whether the advice be given directly to the girl by the physician, or indirectly through the mother

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or guardian. The counsel should consist not alone in regard to the physical needs, but from a moral standpoint as well, if you please. It becomes our privilege and duty to urge mothers to properly explain to the girl her physical and moral makeup. "Innocence will not protect the child, but ignorance may prove her ruin." Certain it is that the girl will learn something pertaining to her sexual organs, not only of their use, but of their abuse as well; then how much better that she be wisely informed by some one who is interested in her welfare, than to learn from her street companions or school friends.

Coleridge truly wrote: "Society would be broken up and man would loathe his brother man if the secrets of each heart were laid open to public gaze."

We would be shocked and horrified if we but knew of the impressions gained by these children, many times from their companions. They are frequently led to believe that intercourse among children is perfectly proper, and likewise habits of masturbation by one method or another are formed innocently, may we say, at least ignorantly, all of which should and many times could be avoided if the child was wisely informed and taught to regard her sexual organs as sacred to her.

Among the first half dozen obstetrical cases attended when beginning the practice of medicine was a young girl of sixteen, who was under the impression that the fœtus would be taken from her by the opening of the abdomen. As an exchange for candies and sweets given to her by the young man she had been persuaded to permit intercouse, and understood that all children learned in that way, never imagining that she would get into trouble. Horrible to relate, however, she not only became pregnant, but syphilized as well. This girl, as with many others, might have been spared all this had she been judiciously counseled by her mother. In this instance surely the prevention of disease would have been much more desirable than the cure.

All are cognizant of the fact that girls arrive at the period of puberty at varying ages. This is due, first, to the constitutional and physical makeup of the individual, and likewise it is influenced largely by climate, maturing considerably earlier in the southern or warm countries than in the north, where the weather is more severe;

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but in a large majority of instances a young girl approaches puberty between the ages of eleven and fourteen years.

Generally speaking, the approach of this important epoch in a girl's life can be foreseen by the physician or mother, and then it is that some one particularly interested in the child should assume the responsibility of informing her of the probable approach of the menstrual flow; what it means, the cause and source of the blood, with general instructions as to the proper care of herself.

This instruction to the child need not be of such a character as to preclude her continued active, joyful, cheerful, free life. Rather endeavor to encourage the childish days as long as possible. Give her romping, open air pleasures and sports and make her feel as free as possible. Do not be in haste with your tight waists or corsets, as they will burden this creature of God soon enough and continue too long at best. Study her physical defects and weaknesses and direct her recreation accordingly, to remedy the poorly developed parts of the body; teach her deep breathing to broaden the chest, give some suitable exercise for the arms, also physical instructions that she may become graceful and strong; out-door sports, such as tennis, horseback riding, driving, rowing, swimming, dancing or any line of recreation in moderation. All of which should be done systematically, as too violent exercise may do more harm than good. Excessive jumping of rope, horseback riding or bicycling will tend to develop the generative organs in excess, and the muscles of this part of the body may become over-developed. Here let me urge more playgrounds and parks in our cities for these and other children. Improper ventilation of our school rooms, factories, homes and places where numerous people congregate is likewise detrimental to the health of the young girl.

During these formative years of a girl's life she should be saved from excessive or unnecessary fret and worry. Do not permit overwork or overstudy. Indeed, the question of overstudy is a serious one in our public schools at the present time. There is a tendency to force children beyond their strength and years. Many times a girl's inactivity and seeming lassitude, due to her menstrual period approaching, will be considered by her thoughtless teacher to be due to lack of interest or wilfulness; but here is where kindness and patience should be practiced.

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Regular hours of sleep and rest should be urged, with plenty of fresh air and sunshine both within doors and out, good wholesome diet regularly enjoyed, but no late eating at night. Avoid excess of sweets and candies, although a reasonable amount of good candy is permissible for the average healthy, growing girl. Guard against any untoward symptoms or appearances of anæmia, chlorosis and the like.

In directing a child regarding her associates, do not forget that the character of her reading is equally essential.

Instruct the mother to observe the character and amount of the menstrual flow of the young girl, teach the child to keep a note of the time the menses make their appearance each month, number of days' duration, how many napkins soiled, amount and extent of pains or cramps suffered. Give her to understand the importance of cleanliness, that frequent bathing is essential ordinarily, but when she approaches the menstrual period she should bathe carefully, and never enter the bath during the time of the flow, but wash lightly only as necessary.

A gentleman recently remarked that a child developed mentally and morally, entirely as they were trained good, bad or indifferent; this is largely true of the physical, if we would but pay more attention and make greater efforts in the physical training of the young girl, considering each child individually, as to her capabilities, endeavoring to overcome the physical defects, strengthen where there is weakness, surrounding them with good, wholesome influences much could be accomplished. Where a young girl must be constantly under the harmful influences of a nervous, hysterical teacher or mother, how is it possible for her to become strong?

If thus we can so guide the mother and thus together we can direct the young girls into womanhood, we will not only help them, but the future race will be the better, for these girls will be the mothers of the coming generation.

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THE ROLE OF VASCULAR DISEASE IN GYNÆCOLOGY.

NORMAN S. BETTS, M. D., PHILADELPHIA.

The intimate relations which exist between normal pelvic functions and vascular phenomena in the female lend a particular importance to the consideration of circulatory disorders in this locality.

The physiological congestion incident to pregnancy, ovulation, menstruation, coitus, etc., necessitate an arrangement of blood supply which is unique. The venous channels, as is usually the case where physiological engorgements must be more or less rapidly depleted, are numerous and capable of a considerable amount of normal distention. The arteries are less capacious, the veins acting as reservoirs and regulators of the degree of turgescence or erection of the vascular organs.

The uterus is completely surrounded by a system of intricate venous plexuses lying beneath the peritoneum and passing out laterally after receiving the blood from veins and sinuses in the uterine muscle. These plexuses communicate freely with the vaginal and vesical plexuses below and passing between the layers of the broad ligament form the uterine vein, which proceeds in an extremely tortuous manner and with numerous collateral anastomosing branches to the latter pelvic wall, where it adjoined the internal iliac. The branches throughout these plexuses are freely supplied with valves, but the common iliac vein, which drains the internal iliac, is without valves.

The ovarian venous capillaries emerge from the hilum of the ovary and enter a mass of veins situated along the inferior margin of the organ. These communicate freely with veins from the upper part of the uterus and from the tube, as well as with the uterine plexus, forming an intricate network, the ovarian or pampiniform plexus. The blood is finally emptied into the ovarian vein, which, passing upward, on the right side empties at an acute angle into the inferior vena cava, on the left side at a right angle into the left renal vein.

In discussing the anatomy of these veins in its relation to pelvic vascular diesase, especially ovarian or spermatic varicosities of the

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left side, it is usually asserted that there is a well marked valve at the opening of the right vein into the inferior vena cava, but frequently none at the orifice of the left into the renal vein. Rivington, however, claims that a valve is usually found at the orifice of both veins. When no valve exists at the opening of the left ovarian a valve is usually present in the left renal vein within one-fourth inch of the point of union with the ovarian. The number, arrangement and functional capacity of the valves in these veins is important, on account of its relation to varices of the vessels of the broad ligament and pampiniform plexus, a lesion to which I wish to draw special attention.

The veins of the broad ligament also establish communication with the portal system by means of branches to the superior hæmorrhoidal plexus, a point of considerable importance in connection with our subject. The left ovarian vein, already somewhat functionally handicapped by the arrangement of its termination, is further embarrassed by passing immediately behind the sigmoid flexure of the colon, the heavy contents of which it is not difficult to conceive, may at times offer another obstacle to the free passage of blood.

It is thus seen that in the venous channels which drain the pelvic genital organs we have numerous conditions favoring diminution of their functional capacity. The vessels start in the loosely supported tissue of the broad ligament, and immediately divide into numerous branches which, in their tortuous course, form innumerable loops and pockets, especially about the ovary in the pampiniform plexus. The blood is finally passed into a vessel, the ovarian vein, the capacity of which is considerably less than that of the channels which it drains. Williams has pointed out that each horizontal section of the uterus has its own arterial and venous branches, passing at right angle to the organ, so that any flexion or kinking, however sharp, cannot interfere to any marked degree with the blood supply, either above or below. He criticises the theory that uterine "engorgement" is a necessary result of displacements, especially flexions.

In my association with specialists in operative gynæcology, I have been impressed with the comparative frequency with which varicose veins of the broad ligament are encountered.

This condition was first described by Richet, in 1854, who gave

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it the name ovarian varicocele (varicocele ovarien). Since then it has been repeatedly observed and the pathology studied by several prominent gynæcologists. It has been the practice in most discussions of the subject to liken the condition, both in general symptomatology and in pathology, to varicocele in the male. The analogy is, however, certainly not a true one. The general anatomical arrangements, not to mention the functional peculiarities in their relation to etiology, are so dissimilar in the two sexes that attempts at comparison would seem somewhat forced.

Various causes for tubo-ovarian varicocele have been advanced—lack of support of the veins, congenital weakness of the walls, absence of valves, constipation, repeated pregnancy, subinvolution, tumors, uterine displacements, affections of the heart, lungs and liver, etc.

While one or more of these factors will explain the condition in many instances, there is a certain class of cases where it appears necessary to seek further for the real cause or causes of such dilation. In these instanecs all of the usual etiological factors are absent, and the condition upon the surface appears idiopathic. On the other hand, with the exception of congenital weakness of the vessel walls, all of the above mentioned causes are met with at times without the slightest permanent effect upon the calibre of the veins.

Michel and Bichat, in reporting a case of enormous varicocele extending from the uterus to the parietal peritoneum on the left side, suggested a totally different etiology, namely, an attenuated infection, during the puerperium, of the lymphatics of the tubo-ovarian pedicle with extension to neighboring vessels causing a periphlebitis, with subsequent dilatation. In support of this theory they adduce the argument that there was a cervical laceration on the same side with great dilatation of the broad ligament lymphatics and sclerosis of the ovary.

It seems probable that premature arrest of involution maintaining pelvic engorgement an undue length of time after child-birth would explain the condition in many cases.

At the present time the complete etiology and pathology of varicose veins remains unsettled. The classical theory of obstruction to outflow will frequently not bear close inspection.

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In fifty cases of varicosities of the lower limb, A. P. Gould found that forty-one were observed before the age of 25 years, a period of life when we do not observe frequent increase in vascular tension, and before undue stress is usually put upon vessel walls. The general physical condition of such patients is frequently extremely good, and all of the usual text-book causes of the trouble can often be excluded. The influence of pregnancy, Gould says, is not that which is usually supposed. In a large number of cases he has found, on close questioning, that the varicosities existed prior to the pregnancy and never gave rise to discomfort until gestation had begun. Also, it is to be noted that patients sometimes complain of the varices at the beginning of pregnancy before the uterus has exerted pressure upon the pelvic veins.

There has seemed to me in many cases to be a distinct hereditary tendency to varicose veins, although I have not now sufficient data at hand to substantiate such an opinion. I believe that we have all seen cases where all causes except an hereditary predisposition could be excluded.

I have at present under my care an unmarried girl of 28, who is being treated for indolent ulcer of the leg. Both lower extremities show a marked, though not extreme, varicose condition, especially of the external saphena. All of the usual obstruction causes can be excluded. She has robust health, the heart and pelvic organs are normal, bowels regular, pregnancy has never occurred, and beyond working behind a counter for some months, a few years ago, she has not been required to be upon her feet more than the average individual. She tells me that three brothers present the same condition, and that she herself has observed "the blue lines ever since she can remember."

Whatever the etiological factors in varicose veins in general, there can be no doubt in cases of large uterine myofribromata, or ovarian cystic tumors, where tubo-ovarian varicocele is so frequently seen that mechanical obstruction is the cause. It is only in cases where no evidence of obstruction can be found that the etiology becomes puzzling.

The walls of the ectatic veins are primarily thin and attenuated, but later a productive phlebitis occurs leading to a connective tissue

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hyperplasia, sclerotic changes, with atrophy of the muscular and elastic fibres, which might be due either to trophic causes or, as seems possible in a few cases, to chronic inflammation from attenuated bacterial infection. The increase in calibre causes an incompetence of the valves, thus producing a vicious circle. Thrombi occur with a fair degree of frequency, and phleboliths are sometimes observed.

The symptoms produced by broad ligament phlebectasis are generally somewhat as follows: Patients complain of a dull, aching, distressing pain on one or both sides in the tubal regions, or extending upward, made worse by physical efforts, standing, walking or sitting bent over, as on a low seat. The discomfort is usually somewhat relieved by lying down for a long time, and after the beginning of menstruation. It is occasionally aggravated just before the flow starts. Gestation sometimes has a favorable influence. There may be a history of malaise, nervousness, general indisposition, neurasthenia and even melancholia.

In a certain number of cases there is a marked tendency to enteroptosis. The following case is fairly typical:

Mrs. M. C., age 25. Married five years. Two children. No miscarriages. Menses began at the seventeenth year. Average duration four to six days. Slight leucorrhœa. Has always been a hard worker. She complains of a dull aching pain, extending from right iliac region upward. Has had appendicitis. Also has severe pain in toes of the right foot accompanied by swelling of the foot. When this pain becomes severe the pain in her side is relieved. The pain lasts a variable length of time, from a few minutes to hours.

Examination showed a rectocele, erosion of the cervix and displacement of the right kidney.

Operation for ventral fixation and appendicitis showed an extreme dilation of the pelvic veins. Is it possible that the right-sided nephroptosis in this case was the etiological factor? We could understand such a condition of affairs more readily on the left side where the renal drains the ovarian vein.

In general these pains show a gradual tendency to become worse and none whatever to ameliorate. The course is characteristically slow, both in onset and progress. When not produced by gross pelvic obstruction conditions I have observed no special tendency to the involvement of one side with greater frequency than the other.

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Where, as is frequently the case, varicosities are complicated by, or are the result of, other pelvic disease such as the presence of neoplasms, the usual symptoms may be masked or entirely altered, as is illustrated in the following case:

Mrs. S. A., married one year. Past history has no bearing except the duration of her illness, thirteen years.

Operation for cystic disease of the right ovary disclosed a marked condition of pelvic varicosity. Uterus small, adherent to rectum, left ovary normal but adherent. Right ovary cystic.

This patient told me that here only pain was of a sticking character, and on the right side. It was not affected in any way by menstruation. Her bowels were constipated, and she has considerable gastric flatulency.

Diagnosis of tubo-ovarian varicocele in such a case would be impossible, and illustrates the fact that the condition at times may be symptomless.

While the broad ligaments are not erectile structures, it seems reasonable to suppose that their veins take part in the hyperæmia incident to sexual excitement, and defective sexual hygiene, prolonged, ungratified desire, excess and the like are doubtless capable of setting up a symptomatology and a pathology such as we have discussed.

Dr. Homer I. Ostrom has pointed out the probability of a condition of acute dilatation of these veins. He says: "The dull, aching in the pelvic fossa and sense of weight and pressure that occasionally attend the close of congestive dysmenorrhœa, and much the same line of symptoms that follow sexual excess, or prolonged ungratified excitement, are in all probability, judging from the analogy of the behavior of the spermatic veins in the male, due to a surcharging of the ovarian veins and plexus; to stagnation of blood and consequent pressure on nerve trunks. With the restoration of the circulation these symptoms disappear, and nothing remains to mark the venous engorgement. I am inclined to believe that such acute dilatation of the pampiniform plexus as we have described has not infrequently been wrongly diagnosed as congested ovaries, or enlarged Fallopian tubes the prevailing impression being that any pain on the side of the uterus is connected with the adnexa and

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must be in the nature of congestion or inflammation of the organs in that location."

It is probable that a diagnosis of tubo-ovarian varicocele by physical examination alone is all but impossible in many cases. Various authors speak of a knotted angle worm feel to the mass in the broad ligament together with a reduction in size when the patient assumes a horizontal position. Provided the vein walls are not thickened, unless the dilatation be extreme it seems probable that but few men have the "tactus eruditus" sufficiently developed to make such a diagnosis—the soft masses readily escape the examining finger in the vagina or rectum. In cases, however, where phlebitis has increased the thickness and hardness of the vein or where thrombi and vein stones have formed we may often readily demonstrate the phlebectasis, provided other pelvic conditions are favorable.

If rupture occurs as occasionally happens we are confronted with the usual symptoms of confined or free abdominal hæmorrhage.

Where the question of differential diagnosis from salpingitis occurs the slow onset and progress of varicocele with absence of fever, inflammatory symptoms, and the usual causes of salpingitis, together with the subjective symptoms above noted will lead us to suspect the real cause of the trouble, especially if the pains be bilateral and the Fallopian tube does not fall into the cul-de-sac of Douglass, as it tends to do when distended.

It is then our belief that in varicocele of the veins of the broad ligament we encounter a condition which in the majority of cases is extremely difficult of diagnosis, and that a correct conclusion can only be reached by a very painstaking consideration of the total symptomatology, subjective and objective, with history, habits and general mode of life. The author also makes the suggestion that the demonstration of a family hereditary tendency may be of value.

Closely allied to the subject which we have been discussing are hæmatoma of the broad ligament or of the parametrium, varices or vascular tumors of the endometrium, vagina, labia and meatus, all of which are most frequently associated with obstetrical work, either as complications or sequelæ. While conditions of real interest and importance their discussion would carry us too far afield, and I shall refer to them only as relevant under the title of the paper.

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Turning now to the role of arterial disease in pelvic pathology, let us briefly consider some of its more important phases, with special reference to the relations of sclerotic processes to pelvic pain and hæmorrhage.

By far the most important part of such a discussion concerns the effect of such dangers in the uterus, and to the consideration of this organ alone I shall confine my remarks.

The study of visceral arterial sclerosis is still practically in its infancy. In a general way it is believed that factors which put stress upon the vaso-motor system, which tend to alter more or less rapidly the blood pressure or which maintain high arterial tension for considerable lengths of time, are concerned in the etiology of the disease. It is in this way that alcoholism, hard work, nervous tension, etc., act. In addition to these we have the effects of various irritating substances upon the vessel walls as seen in certain toxic conditions and the infections.

It has been partly demonstrated that a selective tendency towards arterial degeneration exists in the organs or parts which are called upon to functionate most actively under a given stimulus. In this way myocardial degeneration occurs first and is further advanced than elsewhere in conditions which throw most stress upon the heart. (Nephritis, alcoholism, hard work.) Likewise over-indulgence at table shows its effect upon the vessels of the stomach, liver and pancreas. It is doubtless in accordance with this rule that arteriosclerotic changes so frequently occur in the uterus which has been the subject of circulatory irregularities. The visceral pains produced by the disease are described as similar in whatever organ they occur, and the term anginal is used in describing them.

In chronic metritis and sub-involution where sclerotic changes have taken place this symptom at times occurs. Little is at present known of the diagnostic methods in such cases, but paroxysmal pain, exquisite tenderness and sudden rise of blood pressure, when the etiological factors have been present should lead us to consider such a cause.

The relation between metrorrhagia occurring at or near the menopause and disease of the uterine arterial walls has recently aroused considerable interest.

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Like the veins, the pelvic arteries are subject, especially in sexually active women to unique functional conditions, which in a certain proportion of cases result at middle or advanced life in pathological changes in the blood vessels and surrounding perivascular tissue. The disease is largely confined to women who have borne children, and is accompanied by alterations in the general uterine musculature.

The muscle fibres of the uterus as well as those in the arterial walls themselves have an important function in controlling the calibre of the uterine vessels and by their contraction in regulating the circulation through the organ. In the menstruating uterus the muscular tissue is relaxed and bleeding occurs. The same thing is observed during curettage, where measurements of the uterine cavity before and after the operation will show a resulting increase in the internal dimensions. If, while the bleeding is free, irritating applications such as very hot irrigations are made the uterus contracts and the hæmorrhage ceases.

It becomes thus apparent that in considering the effects of arterial disease as evidenced by hæmorrhage, passive congestion or even anæmia our study must also take into consideration the condition of the uterine muscle; indeed, it has come to be generally believed that in many cases of uterine hæmorrhage of obscure origin the more important factors are myometrial changes, which impair its contractility, the vessel sclerosis and circulatory embarrassments acting secondarily.

This "muscular insufficiency" of the uterus, as it has been called, may be due to various causes, the more common being the production of connective tissue at the expense of the muscle fibres. Less frequently the atony follows the febrile and wasting diseases.

The most common cause of fibrosis uteri is prolonged passive congestion, that sequel of so many ills, local as well as general in character, one, not least in frequency, being the previously considered pelvic varicocele.

Arterio-sclerosis is, of course, the natural accompaniment of old age, and goes hand in hand with sclerotic processes in other parts of the body. The uterine senile changes differ, however, from those which result in bleeding about the menopause in the following particulars: Following the climaxis there normally occurs an atrophy of

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the uterine muscle fibres, which are replaced by connective tissue. The vessel changes are in the nature of an obliterating arteritis with great encroachment of the lumina by proliferation from the intima. The other coats are also thickened, and in many areas the arteries entirely cease to functionate, nothing remaining but a fibrous cord.

In the disease under discussion, however, the elastic tissue of the media and adventitia is chiefly affected, to a less degree that of the intima. The changes are in the nature of a hyperplasia, resulting in a great increase in the thickness of the wall, but frequently leaving the lumen unaltered. At the same time fibrosis of the uterine wall has occurred, which interferes with the normal contractility of the organ and the control of its circulation.

To the hæmorrhage resulting from conditions of this kind, Ansbach, of Philadelphia, has recently given the name "metrorrhagia myopathica," which he defines as a "form of uterine hæmorrhage which is independent of the usual causes of metrorrhagia, and is produced by a pathologic condition of the uterine muscle."

From his studies he concludes that the exact cause of the symptoms is still uncertain, but probably lies in the elastic tissue constituents of the arterial and uterine wall, though it may be purely functional.

The diagnosis of metrorrhagia myopathica is justifiable under the following circumstances: The patient is at or near the menopause and has borne children. Physical examination shows an enlarged and softened uterus with patulous os; all other causes of hæmorrhage can be excluded and the usual therapeutic measures are unavailing. Endometritis frequently accompanies the disease, but thorough curettement has no effect upon the flow when the myometrium has become affected.

Ansbach lays stress upon the necessity of positively excluding carcinoma in such cases.

The possibility of ovarian changes being responsible for many cases of obscure hæmorrhage, especially near the menopause, has been frequently discussed, but this still remains terra incognita. Indeed, the whole field of pelvic vascular disease is beset with theories, debated questions and wide diversity of opinion. It has been the attempt of the author to present very briefly only the most important phases of the subject; an immense amount of research is yet neces-

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sary before we can claim to understand in detail the role which vascular disease plays in gynæcology.

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DISCUSSION.

DR. N. F. LANE: I am very glad to hear this paper. There is a great deal of common sense as well as scientific interest in it. In regard to varicose veins in the broad ligament, I have thought for a number of years that they gave us more trouble than we gave them credit for. I graduated in 1891, that was the time they were removing the ovaries for everything, they were removed for dysmenorrhœa, but the patients were not freed from pain by any means. My observation led me to believe that these varicose veins are many times the cause of dysmenorrhœa or that the dysmenorrhœa is the cause of the development of varicosis. I have noticed that in young unmarried women in whom the symptoms would gradually increase from year to year if the abdomen were opened, varicose veins would be found in the broad ligament. Repeated congestion may possibly be an indirect cause of these varicose veins. In regard to the role of the ovaries that opens up to us a very wide field. In these cases the uterus is large and the bleeding is hard to control; after curettement it is hard to control hæmorrhage, you find a little hardness in the mucous membrane or the tissues. I believe that this is due to a condition of fibrosis or a replacement of the normal tissue by fibrous tissue. It is not a fibrous uterus but merely a displacement of the muscular element by the fibrous element which produces the normal contraction of the uterus.

DR. L. W. THOMPSON: I am very glad to hear the paper, as it gives us an explanation of the causes of some of the conditions that we meet. I have had exceptional opportunity for seeing many of these cases. One case which I treated for a number of years died, and the post mortem showed the stomach to be in a soft, gray, boggy

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condition; there was a cicatrical band in its wall. This condition gave rise to irregular stomach symptoms which we can explain on the conditions found.

DR. W. E. MERCER: Many cases are due to a varicose condition of the plexus of vessels in the broad ligament and on opening the abdomen such a condition will be found to exist.

ECTOPIC PREGNANCY.

N. F. LANE, M. D., PHILADELPHIA.

As you will perceive as you listen to this paper, it is not an exhaustive study of ectopic pregnancy. While I shall not go minutely into the history or symptomatology of the subject, I wish to call attention to certain quite constant phenomana occurring in the condition under consideration. Furthermore, I am not going to say anything new or unknown to those of us who are specializing along this line; but wish particularly to bring this subject to the attention of those who perhaps see few of these cases and who possibly may not be on the lookout for them. While symptomatology of ectopic pregnancy is not constant any more than the physical signs are constant, still there are usually certain characteristic symptoms, which taken together with the physical signs, should make the matter of diagnosis ordinarily quite clear.

I do not say this in a spirit of egotism, for no one realizes more than I that mistakes can be made by every one; but the fact is, these certain cardinal symptoms before alluded to, are often overlooked and the case treated for something it is not.

I think probably the best way to bring the subject before you in an interesting manner, will be to cite certain cases typical of certain stages or types of the disease in question.

One of the first cases that it was my privilege to see was a hospital ward patient operated by Dr. Smedley, at which I assisted.

The history of this case I do not know, but the operation itself is indelibly impressed upon my mind.

Upon opening the abdomen everything was found matted together by adhesions, the omentum covering the pelvis. Upon attempting

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to separate the adhesions a fœtus with cord attached rushed out of the pelvis followed by a terrific flow of blood. The adhesions were quickly separated and clamps applied to the broad ligaments as soon as could be done without injury to the intestines. This patient had lost a large quantity of blood before the operation and this, together with the bleeding during the operation, practically exsanguined her. If my recollection serves me rightly, this woman died. This was before the days when it was common to give infusion or she probably would have recovered.

I mention Dr. Smedley's name because he was known to most of you and to show the gravity of this class of cases even in the hands of operators of exceptional ability.

The following case shows what can be done in extreme collapse from free hæmorrhage into the abdominal cavity, and also the action of infusion of normal salt solution into the veins:

Was called in the evening by Dr. H., who said he thought he had a case of ruptured ectopic pregnancy, that the patient was in a state of collapse and needed immediate attention.

This was probably the most spectacular operation I ever performed, not from the fact of an appreciative audience, but from the surroundings and the appliances with which we had to work. Arriving at the house, no time was lost in getting the patient ready for operation; an oil lamp hung from the ceiling; she was prepared the best we could, was anæsthetized and placed upon the kitchen table. The surroundings and aseptic conditions were not of the best, but the condition of the patient permitted no delay. The abdomen was full of fluid blood; the mass which was upon the right side was clamped, ligated and removed, the belly washed and the wound closed.

The patient should have been infused as soon as the bleeding point was secured, but there was no one present who felt competent to do it. As she was removed from the table to the bed the anæsthetist reported the cessation of the pulse and such seemd the case, but as I had ordered the nurse to prepare the salt solution I proceeded to infuse, and to our surprise and delight, the pulse gradually returned, and to make the story short she made an uneventful recovery, with the exception of an infection at the lower angle of the wound, which was not at all surprising. This infection was the

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indirect cause of further interesting developments in this case. One year later she came to the Hahnemann Hospital to have the slight hernia, the result of the infection, repaired. She had some vague symptoms referable to the left pelvis, nothing very definite, but enough to make me somewhat suspicious, and I requested the operator upon duty at that time to open the peritoneum and examine that side. Rather to our surprise another tubal pregnancy was revealed. The case just recited, of consecutive tubal pregnancy, reminded me of an interesting occurrence in the clinic of Dr. John E. James this spring; where he found, upon opening the abdomen, the tubal sac, and from it came two cords which when drawn upon revealed a fœtus upon the end of each. This is the first and only twin ectopic it has been my fortune to see.

These cases that I have just mentioned where there are symptoms of collapse in a woman who considers herself two or three months pregnant, are usually easy from a diagnostic point of view, and I think there are fewer mistakes made than in the variety of cases that are at first not so alarming.

The following two cases that I saw recently within a period of three weeks will illustrate the points I wish to emphasize:

On June 24th was called by Dr. T. to see a case of supposed incomplete abortion. The abortion was thought to have taken place June 17th; but the patient, still having pain and bleeding after the elapse of nearly a week, it was thought best to curette the uterus.

Upon making an examination, as is my custom after the patient was anæsthetized and before using the curette, I found a mass in the right side, which was tender to pressure even under ether, (not complete narcosis), and at once suspecting the trouble to be ectopic pregnancy, I asked a few more questions in regard to the history of the case (which I should have done before) and declined to do a curettage, advising instead, sending the patient to the hospital for operation. This they did, and at the operation performed the next day we found an unruptured tubal pregnancy with some blood in the abdominal cavity which had leaked out through the end of a practically normal tube, the tumor being situated near the uterine end.

Since the patient went home I have received from her a very complete history of the case and will recite the important points.

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Last regular menstruation occurred March 23d. May 7th (two weeks overtime) menstrual flow started and continued for five weeks. This flow was peculiar from the fact that it would be very free for a few days, then almost cease, then flow again and so on, never stopping entirely. After this the flow ceased for two days; but on June 17th it came on suddenly, quite free and with some pieces of shreds. The bleeding then ceased and it was at this time that the miscarriage was supposed to have occurred. She suffered her first pains while out riding; they were very severe and would shoot up the rectum. This was the latter part of May or about eight weeks from the date of pregnancy. These pains recurred about a week later and the bowels were moved with difficulty and accompanied with pain.

From this time until I saw her she suffered from these pains every few days; they would get better after lying down and she was never confined to her bed for any length of time.

From the time of the supposed miscarriage, June 17th, when the flow ceased so suddenly, she stayed in bed and felt pretty well and the trouble was supposed to be over; but on June 24th she was taken with severe pains, said she became numb all over and thought she was going to die. The doctor was sent for and said there was probably something still in the uterus and requested a consultation. As a matter of fact, he recognized that things were not going in an orthodox fashion for a miscarriage, and wanted advice. The result of the examination and operation I have outlined above.

The second case, while not exactly like the first, is in a general way similar.

Was asked to see another case of supposed threatened abortion by Dr. B. on the afternoon of July 13th. He had made a diagnosis of retroversion and expected the patient to miscarry unless the uterus was replaced, which he could not accomplish without more force than he felt justified in using.

The examination of this woman revealed what all of you who do much of this kind of work would recognize as a pelvis full of blood clots and upon further careful examination I found the uterus pushed to the left, forward and upward and slightly enlarged. After further inquiry into the history and symptoms and consultation with the doctor, we decided we had a case of ruptured tubal pregnancy

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and advised the hospital and operation at once. This was agreed to and the operation performed that night, as we were afraid to postpone it longer, owing to the fact that the pains continued even when the patient was quiet in bed.

In this instance I made the incision a little longer than usual owing to the fact that we sometimes have to work quickly and I do not like to be hampered trying to work through a small opening.

The pelvis was full of clots and the right tube was distended by a mass that was being forced out of the fimbriated extremity, in other words, a tubal abortion. This patient made an uneventful recovery. The following is the history given by the patient:

She menstruated last April 20th, missed May and June, on July 5th she had a sudden profuse flow of blood from the vagina and on the eighth passed membranes and clots and some bleeding continued until the operation on the thirteenth.

The first severe pain occurred on June 26th and lasted one or two hours. She had four more attacks of this pain at intervals of two or three days and became very sore through the pelvis which was aggravated by exercise.

Now you may say, why take up our time reporting such ordinary, commonplace events, and I answer, that is exactly why I report them. Those of us who see many of these cases are on the watch for them, for we know they are not uncommon; yet a general medical man may go for years without seeing one and so overlook the fact that these conditions are so numerous. There may be little danger of a wrong diagnosis in the class of cases where there is collapse with symptoms of internal hæmorrhage as everyone knows something must be done immediately: but the more ordinary cases like the last two mentioned, are very likely to be mistaken for abortions and of course, the sooner they are recognized as ectopic the better.

Superficially considering the symptoms of the last two cases you will no doubt be struck by the fact that they could, and probably would, be taken for abortions, as the patient supposes she is pregnant, there is pain, crampy in character and there is discharge of blood and membranes, all occurring at a time when we expect abortions to take place, the second or third month.

Inquiring carefully into the histories, however, we find certain *irregular* symptoms; the abortion does not proceed in an orderly

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manner, we see no fœtus, no cord or placenta, only clots and membranes, the flow is irregular, the pains irregular, coming and going perhaps hours or days apart; in fact, everything is usually totally unlike an ordinary abortion.

I have noticed lately that these cases usually have sudden profuse gushes of blood and have begun to look upon this symptom with suspicion. As far as symptomatology goes, the general medical man is upon an equal footing with the specialist; but when we come to the real test, the physical examination, the general man is often at a disadvantage. Here we find a soft, fluctuating, tender mass usually on the side corresponding to the most pain; if rupture has occurred the pelvis may be full of clotted blood, giving a boggy feeling, and I have sometimes felt a sort of crepitus upon pressure against the mass. If there is free hæmorrhage taking place the examination may be negative on account of distention and tenderness; but here the symptom of shock will come to our aid. In case of rupture with slow bleeding with clotting, the patient often becomes very anæmic, which is a symptom of importance in making a diagnosis.

As mentioned before, all this looks very easy on paper; but in actual practice (while ordinarily there is no difficulty in making a diagnosis) there are times when it taxes our skill to the utmost and even then the proof may be wanting until the abdomen is opened.

The late Dr. Dudley practiced medicine a great many more years than it will be the fortune of many of us to do before he had a case of twins, and I do not know that he ever did have a case; but he was wont to remark that he did not believe there was such a thing as twins.

This is a frame of mind that we are prone to get into regarding ectopic pregnancy; but the fact remains that there is such a thing as ectopic pregnancy, that it is not uncommon and that although some may have been practicing medicine a number of years and failed to have had a case, still he may see two or three cases in the next two or three months. If this paper and the discussion shall be the means of putting some upon their guard and enable them to recognize the condition when encountered, the object of these wandering remarks will be accomplished.

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DISCUSSION.

DR. W. C. MERCER: I do not know that I can add anything to this paper. It is important that we recognize this condition. Frequently the patient's life is lost if the condition is not diagnosed. It is important that we watch every case; always be suspicious of this condition as it frequently occurs when not looked for.

DR. L. W. THOMPSON: There is one important point brought out in Dr. Lane's first case. Some years ago I had a patient in whom ectopic pregnancy was diagnosed. At this time she was in a fair condition. In order to get her to the hospital we had to go five miles with the horses at a gallop—this resulted in a rupture of the cyst. Under these conditions, as in Dr. Lane's case, an immediate operation at home could not have been contra-indicated.

MENORRHAGIA.

R. L. PIPER, M. D., TYRONE.

In this short article on menorrhagia or excessive loss of blood at the menstrual periods I shall not attempt to give you a scientific and minute account of the pathological conditions which cause the trouble. The student fresh from his Alma Mater retains vivid memories of the class room quiz and the examination nightmare and the practitioner of ten, twenty or thirty years' experience who is not acquainted with these pathological conditions is not likely to be in attendance at our State Society meetings. I believe we obtain more practical value by the recitation and discussion of our practical experience with and treatment of these cases than by a scientific account of the etiological causes.

The first snag we run against is the almost inseparable line between menorrhagia and metrorrhagia. As the causes of both are in many cases similar the local and internal treatment must be alike considered. I think we can consistently divide the causes of menorrhagia into two general heads:

First. Those arising within or about the uterus, as erosion and

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laceration of the cervix, catarrhal inflammations and hypertrophy of the endometrium, neoplasms of the uterus, as mucous and fibroid polypi, etc., pregnancy, displacements, inversion, diseased conditions of the ovaries and tubes, and pathological conditions of the surrounding pelvis by their obstructions of the return circulation, etc.

Second.—General causes, as from acute and chronic disease, overwork, emotions, menopause, habits of life and change of residence, especially from a low to a high altitude, etc.

In regard to the treatment of these cases I might say the chief prerequisite is a thorough examination of your patient. The cause having been ascertained determines to a great extent the character of the treatment, whether it be local, internal, or local and internal. For erosions of the cervix the application of dilute nitric acid carefully applied after proper cleansing with antiseptic solutions has served me better than any other remedy. For diseased conditions of the uterine mucosa dilatation of the cervix and curettage performed in suitable cases followed by applications of thuja oil to the endometrium have ben very satisfactory. Many cases are distinctly surgical in their character, and must be so considered. In regard to the general causes, as before mentioned, proper advice in regard to manner of life and place of residence, the homœopathic remedy which applies alike to all causes will often make patient and physician alike happy. I recall the case of a young lady aged sixteen who had previously been the picture of robust health and vitality, but by constant attendance upon her aged grandfather so taxed her strength that she became anæmic, suffered from menorrhagia and frequent attacks of dyspnœa. After a year's treatment by different physicians, during which period she took tonics ad nauseam, her brother, then a student at Hahnemann College, studied her case carefully and gave her lachesis. Her recovery was remarkably rapid, and to-day (four years afterward) she is her former picture of health. Cases presenting evidence of catarrhal endometritis and hypertrophy and even fibroid degeneration will react beautifully to hydrastis and calcarea fluorica. It has been my custom in these cases to alternate these remedies and the results have been highly satisfactory.

In menorrhagia resulting from relaxation of the uterus, aletris or cimicifuga will prove highly beneficent. Bovista, with its characteristic symptoms, secale, hamamelis, rhus tox., ferrum, Hensel's

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tonic and arsenicum, when indicated, will make our patients' lives endurable and happy.

CURETTING THE UTERUS.

C. M. RHODES, M. D., HARRISBURG.

To attempt to break up an old established custom in any line of life is at best a thankless job, and one likely to call down harsh criticism upon the head of the daring iconoclast. To attempt to uproot old prejudices existing in favor of a certain line of practice in surgery and diametrically oppose such practice is to invite from some adverse criticism of the harshest kind. The only recompense for this is a logical refutation of, or concurrence in, the agreement advanced on the part of the other members of the profession. This latter is what I hope for, and if I provoke a discussion or start a line of thought in the minds of my hearers I shall have achieved all I started out to do.

Curetting the uterus to remove fragments of after-birth and other debris has been taught in our medical schools from time immemorial, and it is firmly fixed in the receptive and retentive mind of every medical student that the first move following any such abnormal uterine condition is to cleanse the uterus by means of the curette. That the organ should be thoroughly and aseptically cleansed admits of no argument, but that the work should be done with a curette I deny. The majority of cases of death following the decomposition of fœtus or placenta in utero are caused by the curette, and I hold that septicæmia may be avoided if more rational practice be resorted to. The condition of the uterus containing septic matter is one of great congestion, the thickened walls and os being covered entirely with a thick, brown, tenacious mucus, nature's means of walling off the septic matter. The congestion is active, and, therefore, the more dangerous in the event of the admission of this septic matter into the circulation. You will please pardon me if I recite just here a few cases which came under my observation where the curette was used:

Mrs. A., whom I was called in to see on the sixth day after at-

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tempted abortion, I curetted, removed fragments of secundines and flushed out the uterus with sterilized water, but the patient developed general peritonitis and died within forty-eight hours.

Mrs. B., age 32, miscarrige at six months, retained secundines for eight days with some constant bleeding. When I was sent for by the attending physician to assist in curettement, she had grown alarmingly weak and developed quite a fever with vomiting. On curettement he removed masses of decomposed placenta and debris. She died the next evening with all the symptoms of septicæmia. Chemical metamorphosis is marvelously rapid in the circulation, and death quickly ensues.

Mrs. C., 40, abortion at two and a half months. Was called in to see her on the fifth day. Found considerable loss of blood, and patient very weak, temperature 101.2°; following a slight chill and vomiting. I prepared her and curetted immediately, removing the placenta by means of the dull curette and plenty of irrigation. Was careful not to denude the membrane, which I am afraid I did, for she developed symptoms of septicæmia in thirty-six hours, but, fortunately, they had not gone beyond control. If, without using the curette, we can remove the septic matter from the uterus without disturbing the mucous covering and enable the uterus of itself to expel the coating, we shall have taken a long step forward in the treatment of this class of uterine cases. The uterus, by means of its congestion can be made to perform a self-cleaning act by exciting the exudation of the serum of the blood into its cavity, thereby washing itself out, and expelling all septic matter instead of absorbing it.

The process of exosmosis is induced by a properly combined alkaline solution at a temperature of 110°, and a strict avoidance of bichloride, carbolic acid, formaldehyde, or any antiseptic of an acid reaction or astringent nature, which would coagulate the fibrin and albumen of the blood. Subsequent cases coming under my care I treated by gentle removal of whatever fragments were lying in the uterine cavity by means of forceps, care being taken not to tear from the walls any adherent piece, followed by gentle flushing of the uterine cavity with the alkaline solution (110°), the reservoir containing the fluid being not more than two feet above the level of the hips. If the flushing could be continuously administered for a few hours, the condition would be more speedily reduced to normal, but

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the comfort of the patient frequently prevents, and a flushing every two hours with one quart of water is about the limit of treatment. For flushing the uterus I use a small dilating uterine douche, and as there is plenty of room for the fluid and fragments to escape, there is no danger of Fallopian colic or salpingitis. The first flushing is generally followed by contractile pains and expulsion of any previously adherent pieces, together with much of the mucus. A tablet of ext. cannabis indica, gr. ¼; ext. ergot, gr. ss, every hour until desired effect is produced, will contract the uterus and alleviate pain. The bowels should be moved freely, both by enema and catharsis. During the interval between douches the patient should be kept on her back with the hips sufficiently raised to permit the retention in the vagina of as much of the alkaline solution as it will hold. The rapidity with which this treatment will reduce temperature, relieve pain, stop vomiting and remove offensive odor is marvelous to one who has not tried it. Sometimes two or three flushings are sufficient to cleanse the uterus thoroughly; vaginal douches being all that are neded subsequently to complete the work. Uterine congestion is speedily relieved and the uterine discharge changes from a brown, thick bad smelling mucus to a thin, transparent one, accompanied or followed by more or less flow of blood. A reduction in the frequency of the flushing is desirable as soon as a tendency to return to normal condition begins to be observed, as it frequently will in twenty-four hours. Then simple vaginal douches every three hours with an occasional uterine flushing if symptoms indicate it.

The action os exosmosis (and endosmosis, for there is every reason to believe in the absorption of some of the fluid) is what is desired to relieve the existing congestion, as in bronchitis, pneumonia, congestion of the kidney, congestion of any mucous membrane, and is the most rational means of restoring to normal condition.

I do not wish to be understood as decrying the use of that most valuable instrument, the curette, but only the abuse of it, to wit, its employment under such conditions as make it practically a sharp weapon loaded with septic matter, dangerous beyond the poisoned arrow of the Malay, or the fangs of cobra, and utterly opposed to our modern ideas of antisepsis. The use of the sharp curette is advocated by a large number of authors, most of them holding that

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curetting is the remedy, par excellence, for uterine hæmorrhage, having the characteristics of either metror- or menorrhagia, for muco-purulent uterine discharges, for pain accompanying either one of these discharges, and especially marked during menstruation. The best results are obtained in cases of hæmorrhage, the least satisfactory where there is tubal disease. The steps of the operation are essentially disinfection of the vagina, dilatation by the steel dilator or by antiseptic laminaria tents, using a small one for twenty-four hours, and then a larger one for the same time, with an antiseptic douche of creoline before and after; the condition of the inside of the uterus is ascertained by the sound or finger. The nail of the finger is ofttimes used as a curette; it is safe but not so efficient. In moving the curette up toward the fundus great care must be taken, as otherwise the instrument may perforate the uterus. The smaller the loop of the curette the greater the danger of perforation. If this should happen one need not be alarmed, but in such a case it is necessary to desist from washing out the uterus, an omission which, of course, in other respects is undesirable.

DISCUSSION.

DR. N. F. LANE: I will not attempt to criticise this paper, but a paper of that stamp would certainly disturb a society of gynæcologists. I cannot imagine how a curettement will kill a patient in forty-eight hours. I have never seen such an occurrence. I do not personally curette all my cases of miscarriage. The doctor is right in the statement that this is the teaching of the present day. If I feel that the uterus is empty I will let the patient alone. If she develops a chill and rise in temperature I curette. It is exceedingly better surgery to do a little scraping than to go on with douching. I do the curettement within six to twelve hours after the initial chill.

DR. ANNA C. CLARKE: I would like to say that we have some symptoms develop before the initial chill. I remember one case in which the patient had a deformed uterus; first we curetted without administering an anæsthetic, afterward curetted under an anæsthetic. I think that these little nervous symptoms are the first indications of sepsis. Some time ago I had an interesting case. Following the delivery of the placenta the patient had a chill, temperature 104,

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pulse 130. I was advised in that case to curette, but I used a continuous saline douche and gave instructions that this should be repeated, four quarts every two hours. We did not curette and came out with the continuous irrigation.

DR. C. M. RHODES: I have frequently came in contact with such cases. The abuse of the curette is what I have tried to bring out. These are the cases which I think we must emphasize, not to the gynæcologist, but to the general practitioner. They are really very dangerous if we are not careful in using the curette. The treatment I have spoken of has been very satisfactory. In a great many cases I have used the continuous douching and the patients have been helped.

LACHESIS IN DISEASE OF THE LEFT OVARY.

A. C. SHUTE, M. D., POTTSTOWN.

My first acquaintance with this remedy in this field was not through my instruction at college nor through my own study in consultation after I had exhausted my resources in a case of inflammation in the left ovarian region in a recently married woman. Had there been a boil there it could not have been more sensitive to touch, heat or motion, and going from bad to worse until I frankly expected the formation of pus, and incision the only relief. But Lachesis 30th cleared up the condition and for twelve years there has been no recurrence or vestige of trouble.

Since then I have looked upon the remedy in irritation of any kind when the left ovary has been affected with a feeling of certainty of attaining results. From condition with simple neuralgia sometimes involving the left hip, or, as it would seem, left sciatic nerve, to cases of clearly gonorrhœal infection with sometimes high fever and local discharges, quite decidedly pus, to cases of undoubted cystic or cancerous conditions, the results have been pleasing indeed.

Comparisons I can only make in one condition. When there is a condition bordering on the septic and Lachesis does not act promptly, I think of Echinacea, and (yet the trouble will usually have become general) Echinacea where pus is present will help here as in any part of the system, but the potency necessary is Tincture to 2x.

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In no cases, however, has it done aught for one in the right ovary, but in the left, it matters not whether there be the further characteristics of Lachesis or not, it is given and disappointment is not found.

There is one characteristic, however, which does mean quicker action, *i. e.*, throbbing and intermittent character of pain. A sense of constriction at waist or neck simply emphasizes this. But the action is so largely curative I feel to write of it as a friend would be right.

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REPORT OF THE

SECTION OF PÆDOLOGY.

Hysteria in Infancy and Childhood, by W. W. Van Baun, M. D.
The Modern Trend of Infant Feeding in Difficult Cases, by C. S. Raue, M. D.
The "Wet Peritoneum" in Typhoid, by E. R. Snader, M. D.

HYSTERIA IN INFANCY AND CHILDHOOD.

WM. W. VAN BAUN, M. D., PHILADELPHIA.

There is a prevailing impression that hysteria is seldom, if ever, met with in early youth, from the second or third year to the twelfth.

Whatever past experience may have been with the descendants of our early sturdy American stock, there is now a mad rush of "neurotism" or "degeneracy" overwhelming many, keeping pace and marking time with the abnormal and unhealthy standard of life set up with the sudden acquisition of wealth, affluence and leisure.

It is the standard of stress and excess, of lost opportunity for health, happiness and usefulness, the era of human waste and exhaustion. The newness, the very suddenness of the situation, affords no time for intelligent perception and proper evolution and adjustment. The newly rich lack the ability to render unto Cæsar the things that are Cæsar's, and rationally pluck and enjoy the blessings and privileges that rightfully attend the possession of wealth. Sooner or later they reap the husks of degeneracy for their own, even unto the second and third generation.

Would that it ended here with this class. The standard set, instantly the race springs to keep the pace and a response thrills down through every stratum of society, reaching unto the lowest, and the carnival of excess has an ever-increasing horde of devotees, with the inevitable result of mental, moral and physical degeneration.

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To-day finds a steadily increasing array of hysteria in those of tender years. Of course, if we look for the well known stigmata of adult life, disappointment will mark the course of our research, but bearing in mind the modifying tendency of child life on the usual clinical picture, our reward will be abundant.

Physicians, teachers and parents are beginning to be truly interested in irritable, unstable, freakish, precocious, eccentric, neurotic children, and what observing and doting parents formerly flattered themselves was unusual, splendid and special attainment of their offspring is now rightly recognized to be a form of minor mental abnormality, which, unless held in check and properly controlled, will lead to disastrous consequences.

Recognition by the intelligent portion of the community leads naturally to control, and soon the same enthusiastic and exhaustive study and research will be given to this class of cases as is now devoted to understanding and relieving the backward and degenerative types of childhood. It is essential now for physicians, educators and parents to clearly recognize that the neurotic offspring of sensualists, nervous, insane, alcoholic, tubercular or syphilitic parents, in either affluent, moderate or poverty-stricken circumstances, may be and often is the victim of hysteria in some of its many aspects. That hysterical phenomena is but a step beyond the "capricious," the "eccentric" and similar types. That it is not a rare condition, not an unusual one, but rather a constantly increasing factor in the nervous exhaustion rending all phases of life, especially in over-crowded, vicious communities.

FREQUENCY.

The best modern text-book authorities dismiss the question of hysteria by stating: "It is not a true disorder of childhood." Others who have more thoroughly reviewed the question from the child's standpoint are constantly raising their estimate of its frequency.

Oppenheim states he has seen hysteria in cases ranging from four to six years, and repeatedly in children from eight to ten years, and has noted hysterical manifestations appearing as early as the second and third year.

All admit that puberty and the years of adolescence following

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furnish the largest number of cases, and that it is common before ten years. It is the few keen observers who are now recognizing and admitting that children may develop it in very marked form even as early as two or three years. These observations destroy the old confidence that there was no such thing as an infantile type of hysteria similar to that appearing in youth and adult life.

In 1859 Briquet insisted that juvenile hysteria was a common affection, claiming that one-fifth of all cases of hysteria are developed before the twelfth year.

Bruns, in 1905, reviewing the situation with the accumulated clinical experience of nearly half a century, states that Briquet's ratio for children is not excessive, but less than the actual truth, and that the ratio of juvenile to adult cases of hysteria is at least one to five. That the sex ratio between children is two to one in favor of the female, and as puberty approaches, the female type increases, while the male type decreases; that the child of the ignorant, poverty-stricken family is as susceptible to hysteria as the spoilt, pampered child of the vicious and idle rich.

ETIOLOGY.

As an etiological factor heredity properly receives willing assent as a potential factor, while environment, the truly dominant factor, is scarcely ever referred to excepting indirectly under such headings as anæmia or chlorosis. Institutional conditions and unsanitary or unhygienic surroundings of the home of either the rich or the poor; in fact, anything leading to an exalted nervous irritability and depreciation of the general health, may lead to hysteria. Other admitted causes are masturbation or phimosis, improper training and discipline, injury, fright, grief, jealousy and imitation.

The hysterical symptoms may be engrafted upon some organic or constitutional disease like tuberculosis, syphilis, or upon some nutritional disorder like marasmus or rickets, or upon a neuralgic or arthritic base. A joint injury with this combination in an impressionable child may present hysterical tenderness, immobility and contracture long after the real exciting condition has passed away.

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SYMPTOMS.

The clinical symptoms which may present run the whole gamut of simulation, suggesting organic disease of the brain, spinal cord, heart, lungs, digestive system, bones or points. In adult patients it is the rule to find the hysterical stigmata and accidents in great numbers. In marked contrast to this the juvenile case presents usually only one distinctive objective symptom. For instance, a localized paralysis. Such undue prominence of a single symptom is strongly suggestive of its functional origin.

Gillette has reported a case of a child eighteen months old who exhibited the symptoms of hysterical palsy in one arm. Cases of hysteria in young children, while usually presenting only one or two physical findings, may also show combinations of psychical or sensory symptoms, or of motor and convulsive symptoms. Often there is a loss of co-ordination for walking or standing. The general condition, like in all hysterical patients, is usually below normal. They are illy nourished and anæmic, they sleep badly and their appetites, digestion and assimilation are faulty. Exceptionally, to confute an established confidence, the general health may appear to be perfect.

DIAGNOSIS.

The diagnosis is often overlooked because in the making there has been a failure to consider hysteria as a possibility; when borne in mind, few cases escape recognition. A combination of vague symptoms not otherwise explained in the child of a neurotic or hysterical family, easily determines the diagnosis, but when similar groups of symptoms are engrafted on or complicate organic or constitutional disease the decision becomes difficult. The paralysis of hysteria and of poliomyelitis may be similar and an atrophy exist in each case, but the Faradic contractility of hysteria clears up the situation.

Monoplegias, paraplegias and hemiplegias occur in hysteria in the young, but there is no facial involvement, the plasy is confined to a single limb. It usually comes suddenly, with flaccidity, normal tendon reflexes and atrophy in long standing cases. Watched closely these paralyses will vary daily, astonishingly in extent and degree.

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If long standing, marked functional, painful contractures may supervene, relaxing only in deep sleep or narcosis.

In monoplegia of the lower extremity with downward flexion of the foot, the scraping of the toes and sickle gait of organic hemiplegia is wanting. Anæsthesia and sensory disturbances are not often found in very young cases of hysteria. If local hyperæsthesia is present there is usually an acute tenderness of the spine on pressure, and the child is unduly sensitive to heat and cold. Many varieties of tonic and clonic spasm are met with from choreic movements like a facial habit spasm to epileptoid seizures; these latter will closely simulate a true epilepsy. The hysterial convulsion is a pure psychic explosion with consciousness always more or less retained, and no matter how violent the seizure there is no aura, no biting of the tongue, no injuries, no involuntaries. A large number of recurrent choreas are hysterical, being fair imitations of an early genuine attack.

The temperament of hysteria is that of exaggeration. There is always a lack of proper proportion between cause and effect. Slight causes are followed by seemingly profound and grave consequences. All children are skilled imitators; the child of hysteria to the degree of perversion, but no perversion can will or simulate the true and unmistakable signs of organic disease, such as lost reflexes, choked discs, facial paralysis, the involuntaries, etc. The prognosis of juvenile cases is better than in adults. The younger the child the more easily the mind is influenced and the quicker the cure. As in adults, the cure will come by and through the mind, and the more rapidly the mentality accepts and yields to suggestion the more satisfactory and complete the cure.

Pronounced hereditary tendency is unfavorable; many of these cases offer stubborn resistance and relapse later in life.

TREATMENT.

The treatment of hysteria is like the hysterical temperament, one of exaggeration. The response lacks proper balance or proportion, cause and effect seem wanting. The results are splendidly successful or fail dismally, dragging indefinitely. The disease is a psycho-

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neurosis, when the psychic element is controlled early by proper suggestion in an impressionable child old enough to comprehend, and before the hysterical habit becomes a fixed morbidity, the suddenness of the desired response is startling and gratifying. This opportunity is lost unless there is an early positive diagnosis. Isolation and confidence are prime factors of success. Isolation being imperative where the surroundings are unsuitable and where complete and intelligent family co-operation is denied. Neurotic children call for physical, for muscular development, rather than mental. The nervous system needs to be held back or in abeyance. The child should lead a simple out-of-door life in the country, free from excitement, with simple diet, regular habits and plenty of sleep.

Their education is to be directed with good judgment and moderation along the line of least resistance, and they are to be shielded from nervous, nagging, hysterical members of their family. The moral treatment is of greater importance than the therapeutical, requiring firmness and kindness, but no sympathy. The eradication of a morbid fad or fancy in a five to ten years' old child calls for untiring, intelligent effort, and the chief obstacle to success will be the family. Medicinal treatment reinforces suggestion and improves the general physical condition, controls the neurasthenic tendency, and tones the nervous system.

The hysterical child needs help, it needs confidence, it needs control. Nothing helps so much as improved nutrition. Good nutrition means a strong body and a stable nervous system, the two essentials. Here it is that our proved and well tried similar remedies show their value. Here aconite, asafœtida, hyoscyamus, ignatia, moschus, phosphorus, valerian and others verify our confidence and reliance by restoring the mental, moral and physical condition of the hysterical victim.

DISCUSSION.

DR. C. S. RAUE; I must confess that I have not encountered many cases of hysteria in children; these cases can readily be diagnosed under anæsthesia. I should be chary about diagnosing a condition of this kind in a young child without having a knowledge of pædia-

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trics. I have seen conditions in children which have been diagnosed as neurasthenia and in these cases I have changed the diet and the children got well. In one case of scurvy I changed the diet and the case got well. Many of the cases are hard to diagnose. It is very much harder to diagnose than hysteria in an adult, but I believe there is no doubt that it does occur. We should diagnose hysteria as a last resort; be sure it is not tuberculosis, rickets or scurvy. I feel that the graver manifestations of a condition of this kind should be looked into very carefully.

DR. JULIA C. LOOS: The treatment of children is peculiar to the homœopath; allopaths simply say that nothing can be done for them. Any condition in a young child must be recognized as based on heredity. These children may go on to an adult hysterical life; they present, as much as any other disorder, a peculiar field for the homœopath. They have many symptoms that are peculiar and hard to explain, they present a condition of hysteria and hysteria is a symptom which belongs to and is recognized among the homœopathic remedies, careful examination must reveal indications for our remedies. Give that remedy and obey the hygienic laws and these children must improve. There is a field for homœopaths in just this class of cases. We ought to regulate their mode of living so that they would not go on to a hysterical condition, but they can be cured by the indicated homœopathic remedies.

DR. R. BERNSTEIN: I have one very interesting case in a girl twelve years of age, a pickpocket; she had a very taking way with her. This girl to my mind had an attack of hysteria, she would throw herself on a cushion and pass away into a dead faint. During one of these attacks she had paralysis on one side of the body and on this side gave evidence of pain or sensitiveness. The next day the paralyses had entirely cleared up. I saw her mother, who was a highly neurotic individual. The only thing that would bring this patient out of these attacks was a pitcher of ice water thrown on her. After this had been repeated several times she got in fear of it and had no more attacks. She went away to England, but was sent back to us again, and is again on the street with her taking ways.

DR. M. J. CHAPMAN: I have met many cases of undoubted hysteria, but have not been so fortunate as some others with the poten-

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tized remedies. In one case with hysterical knee joint I called in some of the other homœpathic practitioners, and finally the case was brought to the hospital and the surgeons put a cast on the limb and through the influence of this cast the patient was cured. She is now a bright, promising girl. When her sister was about ten years of age she had symptoms of appendicitis. I could find all the evidences of it. This went on for days and days, and after having the council of other doctors, we decided that she must have an operation. This subject had been talked over in the family and an operation was decided upon. When the operation was decided on and I had called in three or four other persons to assist the tenderness and other symptoms of appendicitis disappeared and has not recurred since. I have another case, a girl who had attacks that cannot be called anything else than hysteria. This came as a result of conditions that always produce it in children. There are some families that do not ask my opinion as to what should be done in these cases. While I think that remedies are valuable, still there are some of these conditions in which outside influences that impress the person will have a powerful influence in curing the condition.

DR. W. T. TALBOT: I might say that I have had many cases cured by Mephites. One case, a boy who was moulded to his books, a highly organized chap. One day I advised him to go on pony back for the mail; he walked up to me and said, "You are a very arbitrary and dogmatic man." I took him by the scruff of the neck and said, "Walter, saddle that pony; now, get the mail." He went off for the mail almost out of his head with the sense of indignity that was being heaped upon him. He had been through a long series of intense nervous strain. He came back, not on the pony, but leading it; his face was beaming. I said, "What have you in your right hand?" He said, "I have the best luck in the world, I found a skunk." The next day he told me that my judgment was correct and said, "That whatever you want me to do, I will do it." These symptoms, whether of true hysteria or not, will be largely modified and personally I feel that it is better not to pay so much attention to the symptoms themselves, but rather ignore them, and jesting with the boy about these symptoms will cure them.

DR. W. W. VAN BAUN: I am convinced that in many patients hysteria is not recognized. I tried to bring this out clearly in the

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paper. I thoroughly agree with the speaker that nutrition is of the greatest importance in the control of these cases of which Doctor Raue spoke. I endeavored to emphasize most strongly that the dominant feature comes in the line of suggestion; the best suggestion that you can convey is that there is absolutely nothing the matter with the child. It is difficult to control these cases when they are kept in the family circle. Isolation becomes important when the family do not give their co-operation. There was a long newspaper notice about the wonderful case of a seven-year-old boy who had lived a long time by eating a raw egg a day. Two years before he came to me he had an attack of gastro-enteritis, which had lasted for weeks and weeks, and since that time had never eaten anything but an egg a day.

While under my care this patient had more than one egg a day. I insisted that this patient was hysterical and also found evidence of it in the fmily. The thing to do in this case was to gain absolute confidence. Nothing is more trying and exasperating than to go into one of your patient's families and be told that the child has never had anything but a glass of milk and a piece of bread as its diet.

THE MODERN TREND OF INFANT FEEDING IN DIFFICULT CASES.

C. S. RAUE, M. D., PHILADELPHIA.

In spite of the vast amount of careful scientific work that has been done in the field of infant feeding there still exists a decided difference of opinion among some of the authorities and their respective followers. I shall not attempt to enter into a discussion of the various controversies still waging, but will try to point out the tendency manifested by all competent observers who are busying themselves with the nutrition of the infant.

Ever since the introduction of percentage feeding into pædiatrics there have been a number of conservative, experienced men who never quite accepted the dicta of the advocates of this method and who more or less openly predicted that it could not endure, as its practice was not as ideal and perfect as it appeared on the surface.

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They objected, for a long time in vain, to the elasticity of this mode of feeding and to the lack of uniformity among pædiatrists regarding the adjustment of the various percentages of the different ingredients in the food and to the arbitrary manner in which formulæ were recommended and dispensed. The great evil that sprung from the method was the excessive feeding of fat and the insufficient amount of proteid which the child usually received. Carbohydrates, as important to the growing infant, were also more or less neglected. As a result of such feeding there was a decided increase in the number of under-nourished—not underfed—infants, and we also encountered quite an array of cases with fat indigestion, the manifestations of which ranged from simple gastric disturbances to the gravest form of gastric intestinal intoxications and secondary metabolic disturbances. The last named condition in some instances attained to the state of serious autointoxication, recurring vomiting, convulsions, marked acetonuria.

German pædiatrists have for a long time insisted that after all the most important question in infant feeding is to give the child the proper amount of food, neither too much nor too little, and that the proper method of arriving at this question is to determine the calorie requirements of the organism at different ages. Huebner has especially done good work in this direction and he has given us a second working basis for feeding infants according to their calorie requirements. American pædiatrists are taking up the issue, and in the last year there has been considerable activity in our pædiatric literature on this topic. The writer referred to this question some time since in a paper upon metabolism in infancy, and I will here repeat the following remarks from this paper:

"We must recognize that the requirements of normal metabolism undergo periodic variations, dependent upon the varying needs of the organism at different ages of its development. If we view the various diet lists published in the literature from this standpoint, we will see on close examination that many of them are nothing more than arbitrarily constructed menus. These based upon good clinical experience have proved empirically correct. The theoretical ones are incorrect, and those who try them will meet with failure.

"The food requirements of the organism are expressed in calories,

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and we know fairly accurately just what the requirements of the organism are at different ages and under varying conditions of rest and work. These data have been worked out by such tireless investigators as Voit, Pettenkoffer, Rubner and others, and in children the investigations of Cammerer, Czerny and Huebner are especially notable. As has been said before, the food requirements of the infant are relatively high, the reasons for which have already been suggested. Expressed in calories, the 'energy-quotient,' as Huebner calls it, we find that a young infant requires one hundred calories for every kilogram of body weight. This energy quotient gradually decreases with the growth of the child. Thus at ten years there are needed sixty calories pro kg. of body weight (Cammerer), and for the adult forty-three calories pro kg. (Voit). The calorie is the unit of heat, and refers to the heat values of the food. To be more explicit, it represents the amount by weight of a given food required to raise one kilogram of water from 0 to 1 C., when the food is burned in the calorimeter. As the process of oxidization enters so largely into the process of metabolism. this method of estimating the nutritive value of foods has proved eminently satisfactory."

One of the greatest fallacies in infant feeding has ever been the belief that all that was necessary in order to find a proper substitute for woman's milk was to so modify cow's milk as to make it correspond chemically with the former. It was expected that the child would have no difficulty in digesting such a formula, and that this would supply every metabolic requirement to the organism. That this belief is fallacious cannot only be demonstrated chemically, but its incorrectness is daily seen in practice. The scope of this paper forbids me from entering into the full discussion which so important a subject merits, and so much has been written thereon that I could offer you nothing new in this direction. I will briefly, however. recall to your minds that this theory can be attacked from every direction. In the first place, cow's milk and woman's milk differ chemically in almost every essential respect, not only in the proportion of the fats, proteids, sugar and salts. but the proteids of cow's milk are both physically and chemically different from those of woman's, and besides cow's milk lacks certain essential constituents, notably lecithin, which is an important constituent of woman's. As

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to the fat, that of cow's milk is certainly less digestible than that of woman's milk; whether this be due to any essential chemical difference or only to the fact that it is not in the same state of emulsification by the time it is fed to the infant makes no practical difference. Lastly, the contamination of cow's milk with bacteria is one of the most important and one of the most serious facts to be dealt with in artificial feeding. Indeed, the danger of feeding contaminated milk has led some pædiatrists to feed sterilized milk exclusively, a practice not entirely devoid of danger, as serious disturbances of nutrition, among them scurvy, may be traced in many instances to the exclusive use of sterilized food.

It is, therefore, quite apparent that the problem of infant feeding presents innumerable difficulties, and there is small wonder that such a diversity of opinion still exists among pædiatrists.

The manner of computing the calorie value of a given food and determining the "energy quotient," being of such practical importance, naturally merits detailed consideration.

There are two practical methods by which this may be done, namely, by computing the same from the percentage composition of the milk mixture or by estimating the value of the separate ingredients entering into the composition of the formula. An excellent article elucidating the first method has recently been written by Moorehouse (Archives of Pædiatrics, February, 1907), and the author gives a number of equations and also a diagram by the use of which a computation may be made very quickly. Personally, however, I feel that it is always better to remember the principle by which computations of this character are made, and carry out our arithmetical problems in the usual manner, rather than depend upon schemes and formulæ, which one can never recall at a critical moment.

Because of its direct bearing on this subject let me say, first, a word in reference to computing the percentage composition of any mixture under consideration. The simplest method of arriving at this result is as follows: Multiply the percentage of the ingredient to be computed entering into the composition of the formula by the number of ounces of the ingredients used in the formula, and divide the product by the total number of ounces of the mixture. To illustrate, if we are using ten ounces of a ten per cent. cream in a total

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mixture of thirty ounces, the percentage of fat in this mixture will be represented by 10x10:30, or 3 1-3 per cent. Proteids and sugar are estimated in the same manner. For example, the ten per cent. cream contains 3½ per cent. proteids; this mixture, therefore, contains 3½x10:30, or $1^1/_6$ per cent.

Having estimated the different ingredients, to wit, the fat, proteid and sugar, the calorie value of the mixture is determined as follows: 1 gram of fat is equivalent to 9.3 calories, and one gram of proteid and sugar each represent 4.1 calories. We now proceed to reduce the number of ounces in the twenty-four-hour amount to cubic centimeters by multiplying by thirty; next determine the number of grams of fat, proteid and sugar in the mixture by multiplying the number of cubic centimetres in the twenty-four-hour amount by the percentage of fat, proteid and sugar. The calories from each constituent may now be readily determined by multiplying by the calorie value of each as given above.

It is perhaps more simple to compute the calories directly from the ingredients entering into the food. In order to do this we must know the calorie value of milk, cream and sugar. According to Rubner a litre of cow's milk contains 690 calories, mother's milk, 614 to 724 calories, according to the fat percentage. Grennemann (Jour. Amer. Med. Ass., April 20, 1907) gives the following figures, which greatly facilitate the computation of the calories in a food mixture of known composition:

One ounce of 4 per cent. milk equals twenty-one calories; one ounce of 16 per cent. cream, fifty-four calories; one ounce skimmed milk, ten calories; one ounce sugar, 120 calories; one ounce cereal water about three. Our estimation is now made by simply multiplying the number of ounces of each ingredient in the twenty-four-hour quantity by the calorie value and add the products. The "energy quotient" is now determined by dividing this product by the number of pounds the baby weighs and then multiply the result by 2 1-5 to reduce to kilos.

One of the leading sources of confusion still found at the present time in the writings upon infant feeding is the lack of uniformity in the use of the chemical terms applying to the proteids of the milk. Chapin (Arch. Pæd., January, 1907) makes a plea for more scien-

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tific accuracy in speaking of the various modifications of milk, and he points out the following important facts which have been determined recently in the studies of the chemistry of milk, especially through the work of Van Llyke and Hart.

The proteid of milk forming the curd is a chemical combination of lime and free casein. The combination produces a salt which may be called di-casein-egenate of calcium. Rennin coagulates this salt into the well known curd of milk as seen in junket, which is spoken of as paracasein by the Germans. Let us now see what the action of alkalies such as lime water and bicarbonate of soda is in altering the nature of the milk, and thus modifying its digestibility. If a sufficient amount of an alkali be added to the milk, the above mentioned casein combination is converted into a basic salt of calcium, which is not curdled by rennin, unless there be sufficient acid in the gastric juice to neutralize the alkali. Citrate of soda added to milk also inhibits its coagulability by changing the normal calcium casein to sodium casein; in this manner the digestion of the milk is thrown out of the stomach into the small intestine. In buttermilk the proteid is present as casein lactate, which is also unaffected by rennin. For this reason, and also on account of the absence in it of fat, buttermilk is readily digested. Indeed, some writers, notably Bagnisky, consider it an absolute specific in dyspeptic conditions.

Let us now proceed to consider the question of the digestibility of cow's milk. It has long been held that the proteids were the chief source of trouble in digestive derangements, and that cow's milk was difficult to digest on account of the peculiarity of its casein. This doctrine has been disproven by actual experiments (Lacknar, Arch. Pæd., July, 1907). Of course, cow's milk must be diluted before it can be suitable for an infant food, as cow's milk contains approximately three times as much proteid as woman's milk. Lacknar recites the observations of Huebner and Rubner upon the metabolism of the nitrogen compounds of milk from which it was learned that the infant assimilates all but 5 per cent. to 6 per cent. of these compounds. Even if cow's milk could be digested without being diluted there would be a disadvantage in feeding it in this form on account of its high proteid content. It has been shown that feeding an excess of nitrogenous food in infancy does not increase the body weight; metabolic processes, however, are increased, and together

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with this there is excessive heat production. The result of this exaggerated metabolism is, therefore, an increase in the work of the skin and respiratory organs in order to dissipate this abnormal body heat and excessive work for the kidneys to eliminate the nitrogenous waste.

On the other hand, excessive dilution of the milk is to be avoided. Aside from reducing the proteids to a minimum the addition of water to cow's milk lowers its molecular concentration, as determined by the cryoscopic methods to such a degree that the system becomes flooded with water. This, of course, is due to the relatively low osmotic pressure of the food as compared with that of the blood serum and the intestinal epithelial cells. Cow's milk contains considerably more proteid than woman's milk, but strangely enough its molecular concentration and freezing point are about the same as in the case of woman's milk (Koppas). For this reason it will not bear too much dilution. We have all encountered infants with some digestive derangement who were being fed a very weak milk mixture, and who developed general anasarca without any evidence of nephritis. No doubt the low osmotic pressure of the food has played a prominent role in the etiology of these cases.

To revert to the question of the digestibility of casein I shall call your attention to an article by Walls, of Chicago, bearing on this topic (Jour. Amer. Med. Ass., April 27, 1907, No. 17). He quotes Czerny as stating that the theory of the indigestibility of the proteids of cow's milk is largely based on erroneous observations. If cow's milk and rennin be put into a test tube and gently rotated in imitation of the peristaltic movements of the stomach, a fine flocculent precipitate is formed, and not the large dense curd which is formed in the usual experiment. Again, what has generally been supposed to be casein curds in the stools is most frequently clumps of fatty soaps and other fat products.

Walls has purposely fed undiluted skimmed milk to a large number of babies, and has never seen curds in the stool as a result of such feeding. As soon as cream was added the curds made their appearance. He has fed fat free milk even in acute diarrhœa with apparently brilliant results. While I have not had the timerity to follow the radical methods reported by Walls, nevertheless, I have for some time past used skimmed milk, properly diluted, in various

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digestive derangements, even in cases that had been unable to digest the smallest amounts of whole milk or cream. There is no advantage in imitating Walls and using undiluted skimmed milk even should the infant appear to be digesting it well, for the organism does not require such high percentages of proteid, especially in acute diseases, and as has been pointed out above, excessive proteid in the diet adds unnecessary work of elimination to the metabolic processes. Let us, however, impress you with the important fact that the casein of cow's milk is not nearly such a harmful element in dyspeptic and diarrhœal cases as is generally supposed.

After all, then, it must be the fat that frequently causes trouble, and that has not been credited with sufficient importance as a disturbing element. Indeed, it has been looked upon as so innocuous and even beneficial that some physicians have formed the habit of prescribing it in abnormally large amounts, 5, 6 and even 8 per cent. in some mixtures, using the richest cream, either diluted with water alone or added to a milk and cream formula.

The results of excessive fat feeding are a stubborn dyspepsia characterized by persistent vomiting, loss of appetite and usually constipation. Fat is often incerased to extreme amounts in order to overcome constipation, and instead of correcting the condition it actually aggravates it. Beside the dyspeptic symptoms, grave nervous symptoms frequently develop, notably attacks of uncontrollable vomiting (cyclic vomiting) and convulsions. Acetonuria is more or less constantly associated with these conditions, this condition being an index of the grave metabolic derangement resulting from such erroneous feeding.

The symptoms of over-feding often begin so insiduously that the condition is not suspected for a long time. After a period of abnormal gain in weight the child gradually loses its appetite, becomes restless and does not sleep well; there is constipation with dry, grayish stools, more or less colic and soon a gastro-intestinal catastrophe is sure to follow. Other symptoms are dyspepsia, gradual loss of weight and even marasmus as an ultimate result. Eczema is another prominent indication of over-feeding. As Brennemann (loc. cit.) points out, over-feeding towers above all other causes as a cause of nutritional disturbances.

Holt encountered such a large number of cases of serious dis-

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turbances resulting from excessive fat feeding in his consulting practice that he felt it his duty to issue a word of warning to the profession (Arch. Pæd., November, 1906). He laid down the rule that no infant should ever receive more than 4 per cent. fat in any feeding mixture, this being the maximum dose, so to speak. In young infants the ratio of fat to proteid should be 3 : 1; from the 4th to the 8th month we may reduce to 2 : 1 and after that plain milk, suitably diluted, should be used, representing equal proportions of fat and proteid. From personal observation I am more and more convinced that even in this proportion fat will frequently give trouble, and that there are a large number of infants who cannot bear the addition of extra cream to their food formulæ.

In regard to percentage feeding I would say that while for scientific purposes it is absolutely necessary to know the percentage composition of food, for practical purposes, on the other hand, this is unnecessary. I believe that it is far more practical and comprehensible for the general practitioner to think in dilutions rather than in percentages; in other words, let him know how many times cow's milk must be diluted to make it suitable for an infant at a certain age or under certain conditions; no matter whether he be using plain milk, top milk or a milk and cream mixture, he should determine the proportion of water to milk or to milk plus cream, and decide whether this be the proper amount. We know that for an infant one month old the milk should be diluted 4x, during the second month 3x, three to four months 2x, and four to eight months 1x. To my mind this is the key to the situation. The addition of cream and sugar in proper proportion is also necessary and must be carefully determined, but this is second in importance to the matter of dilution.

An important fact to bear in mind is, that after the first half year of infancy an exclusive milk diet becomes insufficient on account of the increasing demand made by the growing organism. This applies especially to iron and other mineral salts which may be supplied by adding beef juice and fruit juice to the diet and by diluting the milk with a cereal decoction in place of plain water. If this precautionary measure be not taken the infant is liable to become anæmic, and especially when the food is sterilized it may develop scurvy. The development of rickets may also be averted by taking this precautionary step.

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In acute conditions in which milk becomes contra-indicated we must temporarily use such foods as barley water and broths. As neither of these articles contain sufficient nutriment to sustain life for any length of time we should always add a cereal to the broth, such as rice or wheat flour, and the food value of the barley water will be greatly enhanced by adding the whites of two eggs and half an ounce of milk sugar or malt sugar to a pint of the same.

Where we are obliged to feed very weak milk mixtures on account of diarrhœa or feeble digestion, the percentage of proteids in the mixture may likewise be raised advantageously by the addition of egg albumin or meat juice. I should like to call attention before closing to the value of gavage in cases where, owing to great prostration, the infant refuses to take sufficient food. This is a condition frequently encountered in congenitally feeble infants, and I believe we do not make use of this valuable method of forced feeding as often as we might.

DISCUSSION.

DR. R. BERNSTEIN: It is surprising what skin manifestations will follow indigestion in babies two or three months old. What are blamed as eczema but are really seborrhœas are started by digestive disturbances, indigestion being a most important factor. It is surprising how soon these conditions will clear up when the diet is corrected.

DR. ELLA D. GOFF: I have been very successful in my cases. I usually have them on mother's milk. In one case I gave half milk and half water with a little barley in it, and it has been gaining and getting along nicely.

DR. H. S. NICHOLSON: I would simply like to commend the doctor's thought in the paper read. It is more a question of dilution than anything else. A great fault with Holt and Rotch is that they have written more for the specialist than for the general practitioner.

DR. C. S. RAUE: As I stated at the outset, I do not wish to advocate any one method of infant feeding. I have probably been misunderstood. The dilution method is very much more practical than the percetnage method. It is very much easier to say that an

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infant under certain conditions, whether acute or chronic, should have the food diluted in a certain way than that it should have a certain percentage.

THE "WET PERITONEUM" IN TYPHOID.

EDWARD R. SNADER, M. D., PHILADELPHIA.

Clinicians are very much alive to the difficulty of determining the extent of the intestinal lesions in typhoid fever. It is almost axiomatic among thinking clinicians that the severity of the general symptoms accompanying typhoid fever is absolutely no guide to the intensity of the local lesions in the intestines. No matter how grave, almost lethal, the so-called "typhoid state" is, we can never justly infer that the implication of Peyer's patches and the mucous membrane is on the same plane of severity. The enteric fever poison is admittedly both local and general in its effects, and these effects do not by any manner of means always balance each other. There are cases, on the other hand, where the systemic manifestations are almost *nil*, and yet the diagnosis of typhoid fever is undoubtedly tenable and correct, in which an inference that the local lesions are similarly slight is not justifiable, and in which there suddenly occurs one of those tragedies of typhoid, hæmorrhage or perforation, or both. Practically, therefore, you can never judge of the intensity of the specific lesions of typhoid by the gravity of the general symptoms, nor infer by the absence of the typhoid state and associated grave phenomena that the local lesions are slight and relatively inconsequential. Of course, whether the general symptoms be slight or severe, if tympanites and tenderness be present we can draw inferences as to the relative gravity of the intestinal implications. In view of these apparent facts, it seems wise to me to draw the attention of the profession to a condition of the peritoneum which I have frequently observed in the later weeks of typhoid fever that has been of importance to me not only diagnostically, but more especially of value in the therapeutic and dietetic management of certain

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cases of enteric fever. I have not found reference to this condition in medical literature. It may have been observed and commented upon frequently by others. I am not at all anxious about the priority of discovery of this sign, but I am anxious that my experience shall be corroborated and the profession have the benefit of a valuable clinical sign, that is of inestimable value to me personally. I have found it in all types of the disease, and at all ages, but with far greater frequency in children. The sign is altogether a palpatory one, obtained by passing the hand over the abdomen with exceedingly light pressure. It may be found generally over the abdomen; but may exist only or more markedly in the right iliac fossa. The sensation conveyed to the hand I cannot better describe than to say that there is a feeling that there is a "wet peritoneum" under my hands. I have not been certain at all about the pathology of this "wet peritoneum." Where I have found it during life, and have subsequently seen the post-mortem, perforation, deep ulceration, intense inflammation of the mucous membrane, and in some instances active inflammation of the peritoneum, have been discovered. Sometimes fluid has been found, sometimes not. Clinically quite a number of these cases show at some period of convalescence a demonstrable quantity of free fluid in the peritoneal cavity. Clinically also some of these cases, where the "wet peritoneum" is well marked, tubercular peritonitis following typhoid has been diagnosed, with and without post mortem confirmation, and with and without recovery. Some of the cases of "wet peritoneum" are undoubtedly tubercular. Most of them are not. Some develop peritonitis who have this "wet peritoneum;" the vast majority do not. This sensation of "wet peritoneum" typically does not give rise to the signs of free fluid, although, as I have before mentioned, it is not infrequent to find it. What I want to indicate is that demonstrable fluid is not necessary in the recognition of the palpatory sign of "wet peritoneum." The sign is sometimes not at all well marked, and it is exceedingly difficult to demonstrate. I have had resident physicians who could not appreciate the sign, from lack of tactile training, examine a number of normal abdomens by palpation and then place their hands on the "wet peritoneum" of typhoid, and they were not able to appreciate, even then, the tactile difference between the feel of a normal abdominal wall and the "wet peritoneum." Ulti-

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mately, after feeling many typhoid abdomens, the necessary tactile education was acquired, enabling them to recognize the sign readily. These men were anxious to ascertain the sign, because they found that I relied almost exclusively upon its absence to determine the question of whether liquid diet should be abandoned and solid food begun. In some instances they found I would order solid food on the twenty-first day, and in other instances delay for six weeks or two months. To me personally this feel of the peritoneum (or abdominal wall, if you want to be hypercritical about the procedure) is the most valuable of signs to determine the possible restoration to normality of the intestines following an attack of typhoid fever, under certain circumstances. If the peritoneum is not "wet" I have little fear of semi-solid food; if it is "wet," then there is danger of hæmorrhage and perforation, and these accidents I have frequently seen follow the administration of semi-solid food (and, indeed, without any dietary error whatever) both in hospital, private and consulting practice when I have found this sign of "wetness." The inference I draw from the "wet peritoneum" in typhoid is that the intestinal lesions of the disease are well marked; that they are not yet "healed," no matter whether the temperature, pulse and respiration have been normal for a month or not. The storm of the disease may have passed, but the wreckage has not been cleared away.

While I have found the "wet peritoneum" in the first stage of peritonitis, in early tubercular peritonitis, in severe entero-colitis, in cirrhosis of the liver prior to the occurrence of ascites, and also in the early stages of ascites from other causes, there is to my hand a distinct difference in feel between the passive "congestion" and the inflammatory "congestion" of the "wet peritoneum" occurring in the late stages (sometimes, however, very early) of enteric fever. This difference in "feel" it is impossibl to describe in words; it can, however, be appreciated practically—the "wet peritoneum" of typhoid is "heavier" than in passive states of engorgement. Occasionally, in very obscure cases, where all ordinary clinical methods failed, I have relied on the "wet peritoneum" to diagnose typhoid fever; but this use of the sign has been exceptional. I try to ascertain the "wetness" or "dryness" of the peritoneum in order to determine whether the intestinal lesions of typhoid fever are severe or not. If I find the sign or "wetness" absent late in the disease, or

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more particularly during convalescene, I am very apt (other factors being equal) to stop liquid food and permit solid food.

I have no statistics whatever at my command as to the frequency of the occurrence of this sensation of wetness or moisture in the abdominal walls in typhoid fever. The observation has extended over a number of years, and I have made use of the sign and its occurrence in a practical sort of way, and it seemed to me that the method ought to be the common knowledge of the profession. It is simply one of those "little things" a practical physician comes to a knowledge of unconsciously, by slow accretion, simply by contact with disease.

The exact value of this observation must be determined in the future. So far, I am of opinion that the inference is not a just one that when a "wet peritoneum" is not found that the intestinal lesions are slight. This would be assuming entirely too much from the observation of any one man, and it is not any inference I often draw myself, save under rare circumstances. I simply feel, when I do not discover the sign while treating typhoid, that the chances are that the local lesions of the typhoid are slight; but when I discover the "wet peritoneum" I am morally certain that the special lesions of typhoid fever are well-developed, marked, and that hæmorrhage and perforation, and even actual peritonitis from continuity and extension, is more apt to occur, and that no matter what the stage of convalescence, no matter how normal the temperature, the respiration, the pulse, and how hungry the patient, no solid food should be given until the peritoneum is no longer "wet." The presence of the sign is, therefore, of more value than its absence. When it has been present and disappears, the inference of a return to normality is nearly conclusive.

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REPORT OF THE

SECTION OF PATHOLOGY AND PATHOLOGICAL ANATOMY.

The Histology of Involution of the Uterus During the Puerperium. Report of a Case, by J. E. James, Jr., M. D.

SYMPOSIUM ON ARTERIO-SCLEROSIS.

1. Vascular Changes in Arterio-Sclerosis, by Watson Marshall, M. D.
2. Ocular Arterio-Sclerosis, by W. W. Blair, M. D.
3. Abdominal Arterio-Sclerosis, by F. D. Stolzenbach, M. D.

THE HISTOLOGY OF INVOLUTION OF THE UTERUS DURING THE PUERPERIUM. REPORT OF A CASE.

JOHN EDWIN JAMES, JR., M. D., PHILADELPHIA.

The clinical history of the case I am about to report is interesting from two view-points:

1. The decidedly deleterious effect of pregnancy and labor in a tuberculous woman.

2. Despite marked constitutional infection, very slight disturbance in normal involution of the uterus.

The case is one of a young colored girl—C. J., aet., 14 years, single, who was admitted to the maternity department of the Hahnemann Hospital, of Philadelphia, January 3, 1907. Her menstrual history was indefinite. As far as the patient knew, she had had only one or two irregular periods before cessation due to pregnancy took place; this latter being given as in June or July, 1906. The date of quickening was not known. From data obtained upon examination—the diagnosis of an 8th month pregnancy was made—

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a Vertex presentation, in the R. O. A. position. As far as could be ascertained, the family history was negative to any chronic infectious diseases. The patient's personal history was negative, up until two weeks before admission to hospital, when she claimed to have caught cold, leaving her with a persistent loose cough.

Physical examination showed a small skeletal frame, the girl fairly well nourished. The heart and lungs negative to any gross pathologic lesions. From an obstetric standpoint a generally small pelvis—the estimated true conjugate of the pelvic inlet 7 cm. Size of fœtus small, the presenting head being made to enter the brim; consequently, no lack of relationship at this time between the size of pelvis and the fœtus. Internally, the perineum normal, vagina small—tight; the cervix obliterated, with an external os patulous for one finger, relatively high in position. Urinary analysis—normal. With the cough, patient had a profuse, frothy expectoration.

On the first day of admission the temperature, pulse and respiratory rate were 100 1-5°, 120, 28, A. M.; and 100 1-5°, 116, 32, P. M.

On the 3d day, the day before delivery, these were 99 2-5°, 104, 6, A. M., and 100 2-5°, 94, 26, P. M.

The labor, which took place on January 7th, 1907, was spontaneous and normal in every respect. Duration, 6 hours. The child was born in the R. O. A. position. No perineal lacerations were obtained. Weight of child 4 lbs., ¾ oz., measured 41 cm. in length, confirming our diagnsois of an 8th month pregnancy. There was but slight molding of the head. The placenta and membranes were readily expelled, intact. There was only the usual amount of bleeding post-partum.

From the first to the fourteenth day post-partum (the period spent in the maternity ward) there was an elevation of temperature and pulse rate. The variation ranged from 100 3-5° to 102 1-5° A. M., and 100 2-5° to 104 2-5° P. M. The pulse from 102-118 A. M., to 90-120 P. M. The temperatuse was always lower in the morning than in the afternoon. The respirations varied from 24 to 34. At no time was there a chill. At no time did the patient give any symptoms of pain or distress. There was no tendency to milk formation and the child was not put to the breast. The lochia remained constantly normal in character, amount and odor changing to serosa on the 6th day. The fundus sank as in the average

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primipara—being one finger's breadth above the symphysis pubis at the 10th day. Repeated internal examinations excluded all possibility of pelvic infection. Two widal tests were negative. The character of the cough and expectoration remained the same, the sputum examination revealing pneumococci, but no tubercle bacilli. In consultation with the medical staff—a tentative diagnosis of broncho-pneumonia was made. On the 14th day, patient was transferred to the medical wards. The internal examination before leaving the maternity revealed. Perineum, normal, no lacerations; vagina, negative; cervix, lacerated, firm, pointing backward; canal, tightly closed. Body-fundus anterior, body movable, not tender, on level with symphysis pubis.

Parametrium, negative.

Lochia, serous, scanty, natural odor.

Breasts, negative, no secretion.

Upon admission to the general hospital the following is recorded on the chart:

Slight emaciation. Circulatory system, negative.

Fauces, pale. Expiratory sound longer and harsher at right apex. Dulness at right apex, anterior and posterior. Middle lobe of right lung, especially posteriorly, consolidated. Frothy, purulent expectoration.

During the following weeks, the temperature ranged from 101 1-5° A. M. to 104 2-5° P. M., with a pulse rate of 114 to 128 and respirations 30 to 40. Two weeks before death an inverted temperature elevation was present. Repeated sputum examinations showed only pneumococci until February 20th, about six weeks after delivery, at which time tubercle bacilli became abundant. Death occurred March 10th, in the 9th week post-partum.

The lochia ceased on January 30th, or at about four weeks post-partum.

The report of the autopsy, made by Dr. Sappington twenty-four hours after death, states:

Emaciation; slight rigor mortis. Reduction of subcutaneous and pre-peritoneal fat.

Chest: Marked enlargement of all glands of chest and mediastinum, adhesions over both pleura, more marked at bases and on right side. No pleuritis; sub-pleural miliary nodules on costal surfaces.

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Lungs: Acute caseous pneumonia—middle lobe. Acute caseous pneumonia—lower lobe.

Upper lobe and most of left lung practically free.

Primary seat probably in mediastinal glands and spread by direct extension to middle lobe.

Heart, negative.

Peritoneum: Miliary and pea-sized caseous nodules everywhere with large caseous mass aggregated around spleen. Few adhesions.

Liver: Tuberculous nodules and enlargement.

Spleen: Miliary nodules, .5 to 1 cm. and smaller.

Kidneys: Few nodules.

Pancreas: Negative.

Genitalia: Small, apparently normal, except for miliary nodules over peritoneal surfaces.

Diagnosis: General miliary tuberculosis.

I am limiting this paper to the consideration of the uterus. This organ removed at the autopsy, measured 7.5 cm. in length, 4 cm. in breadth at a point just below the cornua. Weight, not ascertained. The cervix was tightly closed—both internal and external os. the latter presenting slight laceration. Tuberculous nodules on peritoneal coat, as noted above.

Macroscopic study of secretions, cut transversely, showed: Uterine cavity a mere cleft, as in virgin state, with a mucous membrane lining of normal thickness, 1 mm. The walls presented a spongy appearance, being perforated extensively with canals, some larger, some smaller, containing blood. These vessels were especially large and frequent above the mid-point of the organ. The peritoneal cavity was apparently in close approximation with the uterine walls, anteriorly and posteriorly.

Microscopic study of sections taken from various parts of entire organ revealed the following:

1. The mucous membrane. The endometrium completely regenerated except in upper part of cervix and at one point near the fundus of the uterus where there remained a small area of degenerated chorionic villi and few decidual cells. In these two locations there were reformed glands and stroma, but an absence of the lining epithelium—its place being substituted by a granulation tissue. Sections from all other locations showed an endometrium of normal

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thickness, made up of small, regular, glands, lined with cylindrical epithelium of one row; a normal stroma, and a lining of a single layer of cylindrical epithelial cells with a distinct basal membrane. The glands were slightly diminished as to frequency, compared to the normal. At the site of placental attachment the mucous membrane was increased in thickness slightly and within the stroma were several areas of hyaline substance, probably the sites of early thrombus formation. In this location, likewise, were scattered throughout, numerous small, rust-colored bodies.

Of special interest is the small area showing the presence of chorionic villi. It would be practically an impossibility to detect with the naked eye the absence of such a small amount of tissue from the placenta. Yet, its presence in the uterine cavity would be capable of giving rise to serious complications. How frequently such masses remain in the uterine cavity without giving rise to symptoms we cannot infer—it is very probable that it is of common occurrence, inasmuch as the tissue will degenerate and in time be completely absorbed. The microscopic finding of such a state, on the other hand, offers a ready explanation for the occurrence of the placental polyp in cases where we least expect them. Likewise, for the occurrence of the malignant chorio-epithelium following normal, full term pregnancies; a rare phenomenon, an example of which, I reported before this Society three years ago.

2. The Blood Vessels: These showed, throughout the uterus, the typical findings of an endarteritis obliterans. There were marked proliferation of the intima and to such a degree as to, in the majority of the vessels, completely fill and obliterate the lumen, while in the minority, to leave a small, irregular space or cleft between the margins of the thickened lining. This coat apparently formed half the thickness of the walls of the uteurs. The media showed a persistence in its hypertrophy; and many sections revealed decided hyaline degeneration in this coat—evidenced nicely in those stained with the Mallory differential stain. Here and there was noticed a vessel returned to its normal histologic character. Due to the existing enlargement of the media and intima, the vessels stood out prominently in gross sections, giving the spongy appearance to the tissue. Particularly large and noticeably with lumens entirely obliterated were the vessels in the immediate neighborhood

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of placental attachment. In this region also typical thrombi were found; connective, fibrous masses, surrounded by a delicate endothelium (Van Gieson stain).

3d. The musculature showed complete involution, the individual fibres appearing normal or very nearly so in size. Osmic acid failed to reveal any existing fatty metamorphosis. The connective tissue network of the walls appeared normal. This was nicely demonstrated with the Mallory stain.

4th. A study of the elastic fibres of the blood vessels, under the Weigert stain, was indefinite. There appeared to be an increase in those vessels showing hypertrophy of the media. We would naturally look for an hypertrophy of this element in conjunction with the general enlargement. The method by which these fibres increase and undergo atrophy is yet to be thoroughly studied.

Thorough examination failed to show any tuberculous infection of the endometrium or myometrium. In sections from a cut made near the fundus, tuberculous nodules with caseation could be demonstrated in the peritoneal coating. They were entirely limited to this tissue.

With this report in mind, I believe it will not be amiss for the sake of comparison, to devote a few minutes to a brief resume of the histology of the uterus during the puerperium as found in the literature. For a more comprehensive understanding of the subject, I will first of all recall the changes in the uterus depending upon pregnancy.

Bumm characterizes the enlargement of this organ, as an "Exentric Hyperthrophy." The hypertrophy affects, in reality, all tissues of the uterus equally and regularly. The enlargement is not a mechanical process, inasmuch as it is only after the middle half of the pregnancy that the fœtus completely fills the uterine cavity; rather is it to be looked upon as the result of reflex processes or a specific irritant inducing an hyperæmia which brings with it an increased nutrition. In the early stage, an analogue is to be seen in the alterations occurring in the uterus dependent upon each menstrual period. In the virgin uterus we have an organ weighing 50 grammes, 7 cm. in length and 4.5 cm. in breadth, with an outer surface measuring 6 square inches; and practically no cavity. At the end of a normal pregnancy the organ will weight 1,000 grammes,

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be 16-18 cm. in length, the outer surface measuring 339 square inches, and a cavity with a capacity, according to Krause, increased over the normal 519 fold.

The endometrium is hypertrophied to the average thickness of 1 cm., this enlargement being dependent upon an increase in each of its constituents. The cells of the connective tissue stroma enlarge to form the large polygonal mononuclear decidual cells, which are aggregated into one layer forming the decidua compacta; the glands enlarge and become irregular in outline, similar to the type characterizing the so-called endometritis glandularis hypertrophia and are limited to that part of the decidua in contact with the musculature and forming the decidua spongiosa; the capillaries undergo marked dilatation, several anastomosing to form large blood sinuses.

The hypertrophy of the uterine musculature accounts for the decided increase in size of the organ. The three strata or layers of muscle bundles theoretically present in the virgin uterus become well defined and easily demonstrated. These are described by Edgar as:

1. An external or hood-like longitudinal layer passing over from fundus and continuing into the ligaments.

2. A median layer where the network of fibres attains its greatest thickness.

3. An internal layer forming the sphincters about the uterine orifices—the tubes and os uteri.

"These chief layers are connected by communicating groups, so that where they are separated, the intervening spaces are rhomboidal in shape."

The hypertrophy is alone due to increase in size of each separate muscle fibre, and not to new formation of muscle bundles. The normal spindle-shaped fibre, retaining its shape, increases especially in its protoplasmic substance, measuring at term about 500 u., or about ten times its normal, average length, and is about five times its normal diameter in width.

The fibrous connective-tissue network between the muscle bundles shows a well marked hypertrophy. New fibres are here found; also the original fibres increase in bulk, due to swelling and œdema by absorption of fluid, according to Edgar.

The changes in the blood-vessels are decided—as studied by most

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writers on the injected preparation of a full-term pregnant uterus made by Hyrtl. The veins of the uterine wall show the greatest hypertrophy and dilatation and, as thin walled anastomasing canals, penetrate the musculature in all directions. The accompanying arteries show similar changes, to a less degree. At the placental site, several of these dilated vessels will unite to form large sinuses. Both the uterine and ovarian arteries are enlarged; to a less degree, however, than the associated veins. These latter reach a diameter equal to that of the small finger.

The lymphatics are likewise hypertrophied and increased in number. The channels running through the muscular wall, reach the size of a goose-quill. Beneath the peritoneum, these form a plexus directly continuous with the general lymphatic circulation.

With the completion of labor, in the normal woman, we find the fundus of the uterus firmly contracted about three to four fingers' breadth beneath the umbilicus. Permanent contraction of the organ takes place from one to two hours on the average, after the end of the 3d stage, at which time we are accustomed to find the fundus in the neighborhood of the umbilicus. From this time on, we have to deal with involution. About the 10th to 12th day post-partum the fundus is at the symphysis pubis, and, according to accurate internal measurements, it has returned to its normal dimensions only at about the sixth or eighth week. This rapid decrease in size is dependent chiefly upon the changes in the musculature. The atrophy is one of malnutrition. With the contractions of the uterine muscle post-partum, the large vessels are markedly compressed. This compression is greatest in those women who nurse the offspring and in those who suffer from "after-pains." Likewise, with the tearing of the vessels associated with placental separation, thrombosis is favored and does occur. Evidence of diminished circulation is first seen in a fatty metamorphosis of each individual muscle fibre, both of its protoplasm and nucleus. The fibre becomes cloudy in a few days, numerous fat drops will form within it—these coalescing to form larger masses, which, according to most examiners, accumulate between the various bundles, whence it is taken up by the blood and lymph channels. In this manner we have each fibre returning to its normal state, without any numerical loss.

The hypertrophied vessels, in like manner, undergo atrophy. At

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the site of placental attachment, where are the larger sinuses, we find the vessels occluded by thrombosis. These blood clots very quickly become organized into connective-tissue masses by a proliferation of the endothelial cells surrounding the clots (according to Patenko). Such thrombi may persist for an extended length of itme.

The arteries show the degenerative changes most prominently—corroborated by my specimens. In the first place, there is a marked proliferation of the intima by which the lumen of the vessels becomes smaller and smaller until it be entirely obliterated. This may take place regularly, giving rise to a concentric narrowing and closure of the vessel; or it may be an irregular process, the lumen in this instance persisting as an irregularly-shaped cleft. In other words, endarteritis obliteratns, or, as Williams designates it, compensatory endarteritis, takes place. Atrophy of the media takes place by a similar process as that in the uterine muscle, fatty metamorphosis (Schauta). Hyaline degeneration of the media is a frequent occurrence; seen very nicely in the specimens I have prepared.

The veins, being thin walled, show little degenerative changes. Here and there will be found a proliferation of the intima. The walls of these vessels become markedly folded or collapsed upon themselves.

Schauta draws attention to the presence throughout the uterine walls and endometrium of deposits of rust colored bodies of pigment, to which I have drawn attention in my specimens. He considers them as an absolute sign of a recent pregnancy.

Regeneration of the endometrium is a particularly interesting phenomenon. You will recall, with the separation of the placenta, the compact layer of the decidua is thrown off, leaving the torn glandular or spongy layer attached to the musculature. As the starting point we have remnants of glands and the delicate inter-glandular stroma. First, there is a well marked round cell infiltration, which early forms a granulation tissue lining for the uterine cavity. This rapidly shows a line of demarcation, and then, undergoing necrosis, is cast off in the lochia. In association with this there is taking place a proliferation of the connective tissue cells of the inter-glandular stroma and of the epithelial cells lining the gland remnants. The former gives rise to new connective cells, forming a stroma such as is seen in the normal endometrium. At times, the individual decidual

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cells remaining will undergo atrophy to their normal condition. The proliferating glandular epithelium spreads to form a complete lining of cylindrical cells, single rowed, for the cavum uteri. This may be completed in a week's time, usually the completion is not present, absolutely, until the third week. By invaginations of this lining epithelium into the newly formed stroma, new glands, or, more strictly speaking, the normal uterine crypts, are developed. Proliferations from the vessels of the musculature is concomitant with that of the stroma and glandular elements to give rise to the capillaries of the new mucosa.

Occasionally large masses of decidual cells will remain attached to the uterine cavity. These will undergo necrosis and absorption, delaying, however, the complete regeneration of the endometrium until about the sixth week. The possibility of bits of placental tissue remaining attached to the uterus I have already mentioned in conjunction with my specimens.

I am sorry I did not have a series of cases upon which to report the microscopic findings during involution. I believe this one case does present more or less interest in the fact that we had a tuberculous affection aggravated by pregnancy and labor; it, however, having made slight effect upon uterine involution. It is hardly within the scope of this paper to draw the morals that might be deduced.

VASCULAR CHANGES IN ARTERIO-SCLEROSIS.

WATSON MARSHALL, M. D., PITTSBURG.

It was the intention of those having in charge the Pathological Section to present a number of papers on the subject of arterio-sclerosis, and it was thought advisable to have this series of papers preceded by a short account of the histological anatomy of the arterial walls. This task has fallen to me. And I wish to emphasize that what I have to say is purely preliminary and introductory to the learned discussions which are to follow.

First, a word in review of the normal anatomy.

You will recall at once that the normal artery has in its wall three distinct coats histologically demonstrable, namely, the intima, media

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and adventitia. These differ greatly in their component elements, all going to form a wall which is at once strong, firm, yet elastic and contractile.

The inner coat, or intima, is composed of a layer of endothelial plates, running longitudinally. Beneath this is a fibrous connective tissue band, the subepithelial layer. Between this and the "media" is a wavy, irregular glistening band of elastic tissue, the internal elastic membrane.

These three component elements of the intima vary in density and thickness with the diameter of the several arteries, the subendothelial and elastic strata increasing in general with increased caliber.

In the media, or middle coat, are found bundles of involuntary non-striated muscle cells, for the most part, circularly disposed. This coat, like the intima, also varies in vessels of different caliber; in the smaller, composed almost entirely of muscle cells, in the larger, a more or less generous amount of fibrous connective and elastic elements. It follows, of course, that the smaller vessels are much more contractile than the larger.

The adventitia, or external coat, gives the artery its resistance and strength. It is composed of dense fibro-elastic tissue. The mesh work reaches its greatest density where it borders on the media, and externally shades off into the surrounding connective tissue.

Many of the larger arteries have individual peculiarities as regards the disposition of the above elements, such as the external iliac, renal, etc., but these do not demand consideration at this time.

It is, however, of interest to note that the arterioles consist of a single endothelial lining, a media of a single layer of muscle cells and an adventitia of a very few longitudinal bundles of connective tissue, while the capillaries, simplest of all in structure, are composed of a single endothelial coat.

Now, as regards the pathological condition, known as arterio-sclerosis. The term, introduced some fifty years ago, as you know, means simply, indurated thickening, and, depending on whether the process is general or sharply limited, we have the term "diffuse" and "nodose" or "circumscribed."

Macroscopically, we find the vessels firm and hard, and on transverse section, they stand open, the lumina being larger or smaller than normal.

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On the inner surface of the vessel wall, in the so-called circumscript or nodose form, are found round, oval or irregular elevations, the atheromatous plaque, usually yellowish white in color, varying in size from a mere point to that of a small coin, raised a millimeter or two above the surrounding surface. Their surface is usually smooth, and, if no degenerative changes have occurred, the consistency is firm, and, to the touch, may resemble cartilage. If, however, such changes have occurred, they become soft and friable and the surface roughened.

To quote McFarland, "The sequence of events in their development varies, some look upon the media, some upon the direct damage of the vessel walls by circulating poisons, and some upon disease of the vasa vasorum as the starting point of the disease." Be that as it may, the early changes—microscopically—consist of a hyperplasia of the connective tissue cells of the subendothelial portion of the intima. Later a similar hyperplasia occurs in the media, with destruction of the muscular elements and occlusion of the vasa vasorum.

Due to the resultant malnutrition, degenerative changes occur, with the formation of fatty and hyaline material. This may in turn give place to cyst formation with the deposit of fatty granules and cholesterin crystals. Lime salts are also frequently demonstrable.

Should the degenerative process go forward very rapidly atheromatous ulcers may form, and it would seem, as if to ward against actual rupture of the vessel, nature fortifies the wall by increase in the connective tissue elements in the outer zonés. This, however, must be a clumsy process, for by so doing the original evil must be spread to adjoining sections.

In the diffuse form a more general process is at work, the lesions much more extensive, and the limits not as clearly defined. The media and the intima are both thickened and present fatty and hyaline degeneration, together with increase of the supporting connective tissue framework. As mentioned above, it is more prone to affect the smaller vessels and arterioles, and, clinically, is probably the more important of the recognized form of the disease.

As regards the etiology, a long list of causal factors is at hand. Osler emphasizes the part played by high living. This, however, may be explained by the fact that high living means increased heart action with high blood pressure as a consequence. Hard work may

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be similarly disposed of, with this in addition, strain or trauma of the vessel walls predisposes to the condition.

Alcoholism. Here it is well to recall Brook's observation that inasmuch as exposure, dissipation, faulty elimination and muscular exertion are usually associated with the condition of alcoholism, the possibility of their playing an etiological part must not be overlooked. It is often associated with the acute infections, and is frequently found in persons suffering with lead poisoning.

Syphilis, the scapegoat of the physician who looks for the cause of things, has this crime also laid on its broad and already overburdened shoulders.

It is generally conceded that high blood pressure maintained over a considerable time, brought about by heavy muscular work, the excessive use of tobacco and stimulants, together with over-feeding, constitutes, at least, the prime predisposing factor.

A condition closely resembling, if not identical with, arterio-sclerosis, has been experimentally produced by the repeated administration of adrenalin extract, acting, presumably, by its increasing the arterial tension.

Finally, old age must be held responsible in many instances. However, taking the observation of one of our savants for truth, namely, that a man is as old as his arteries, it would seem to approach the fact more closely, were we to lay the crime of old age at the door of arterio-sclerosis, rather than charge old age with the crime of arterio-sclerosis.

ABDOMINAL ARTERIO-SCLEROSIS; WITH PARTICULAR REFERENCE TO ITS ASSOCIATED PAIN AND TO DIAGNOSIS.

FRANK D. STOLZENBACH, M. D., PITTSBURG.

Several years ago the writer's interest was aroused in the subject of epigastric pain in persons past middle age by the following case: Mr. S., age 64, history of sedentary life, full of the stress and strain of an active commercial career; no history of syphilis or of over-indulgence in alcohol, tobacco or food. The patient's chief complaint was severe paroxysmal abdominal pain, burning, radiating from the epigastrium, accompanied by distention and a marked degree of

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mental and physical shock. The only apparent excitant of the symptoms seemed to be mental stress, worry and anxiety concerning his immediate family. There were hyperchlorhydria, flatulence, constipation, nocturnal polyuria, slight albuminuria, cylinduria, moderate arterial hypertension, and a moderate degree of thickening of the peripheral vessels.

The peculiar elements of the case were the paroxysmal nature of the attacks, their seeming dependence upon emotional stress, their association with peripheral arterial thickening and arterial hypertension and interstitial nephritis, the failure of treatment directed to the gastro-intestinal tract, and relief from prolonged mental and physical rest, change of scene and sedatives. Gastric cancer, ulcer and erosions were excluded by most careful diagnostic consideration and the subsequent history of the case.

The question arose in the mind of the writer, Can splanchnic arterio-sclerosis cause the symptom complex presented by this case? Modern research[1] has shown the strong probability of splanchnic arterio-sclerosis in the presence of persistently high arterial tension associated with the evidences of sclerosis of the peripheral vessels with or without the existence of symptoms of contracted kidney in persons past the middle period of life. Assuming, then, that this patient might have had hardening of the abdominal arteries, what lesions could be present, and how could the same cause the paroxysmal pain described?

Huchard, Javroski and von Leyden have described cases of similar character. The term, "angina pectoris gastralgica," was used to designate the attacks. Buch,[52] in 1904, made a comparative and analytic study of twenty-five cases from the literature and his own experience. He describes two types of syndrome:

1. "Arterio-sclerotic cramp," paroxysmal, epigastric or umbilical pain similar to the typical descriptions of gastralgia; the exciting causes seemed to be emotion, over-exertion and the horizontal position, one-fifth of all the paroxysms being caused by the latter. Tenderness was usually present over the seat of greatest pain. Peripheral arterio-sclerosis was usually present with accentuation of the aortic second sound; no manometric observations were made. A peculiar feature was the marked relief from diuretin and strophanthus.

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2. Epigastric pain occurring with and as a part of angina pectoris, previously described by v. Schrotter, Huchard and Neusser.

Rittershaus[3] has described paroxysms due to embolism and thrombosis of the mesenteric vessels, giving a typical picture of ileus. Perutz[4] cites one case associated with aneurism of the abdominal aorta, shown by the X-ray.

The writer, in analyzing a series of nineteen cases of abdominal pain from the literature on the subject, which post mortem were shown positively to be associated with arterio-sclerosis of the splanchnic vessels, found the attacks in general to consist of the following grand characteristics:

Pain, abdominal, umbilical or epigastric, paroxysmal, more or less gastralgic or enteralgic in type, usually occurring after periods of physical or emotional stress.

Distention of the abdomen usually well marked.

Arrested or greatly diminished peristalsis, with constipation, often obstinate in character.

Digestive disturbances, nausea, vomiting, at times hæmetemesis.

The whole symptom group is strongly suggestive of ileus, for which it is not seldom mistaken.

Assuming, then, that the symptom group in the case cited may occur in connection with splanchnic arterio-sclerosis, how can the pain be explained?

Spasm of the coronary arteries may possibly produce heart pains.*[5] Spasm of the arteries of the extremity may cause the familiar cramp of the calves so frequent in the arterio-sclerotic, or it may cause a temporary paraplegia, the phenomenon first described by Charcot as intermittent limping.[5] In cases of arterio-sclerosis of the retinal vessels,[6] spasm of the central artery of the retina has been actually seen four times by means of the ophthalmoscope in cases of intermittent blindness. It must seem, therefore, beyond question that arterial spasm does occur in arterio-sclerosis.

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*Schaffer has demonstrated the absence of contractibility in the coronary artery. (G. Oliver, "Studies in Blood Pressure," p. 130, London, 1906.) "Dr. James Mackenzie has shown that the pulsus alternans, the alternating action of the heart, which, according to F. B. Hoffman and Wenckebach, indicates exhausted contractility of the cardiac muscle, is always associated with the symptom complex of angina pectoris. He, therefore, regards angina pectoris as evidence of impairment of the function of contractility."

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The symptoms in the clinical types mentioned, the intermittent blindness, the intermittent limping, the heart and the leg pain, have been ascribed to the temporary ischæmia caused by the spasm of the vessels supplying the affected organs. In spastic contraction of the splanchnic arteries the sudden anæmia produced would account for the functional paralysis with the attendant motor phenomena, the distention, the diminished peristalsis, the constipation and the digestive symptoms. Will the arterial spasm explain the pain?

The mechanism of abdominal pain has been a matter of speculation for a great many years. Perutz[4] believes the pain of abdominal arterio-sclerosis to be due to a local rise of blood pressure, the seat of the pain being located in the sympathetic and mesenteric plexuses.

Buch[52] attributes the pain to neuralgia of the abdominal sympathetics. Nothnagel[7] held that abdominal pain of a colicky nature is due to two causes: (1) Tonic spasm of the muscular coat compressing the sensory nerve in the intestinal walls, and (2) anæmia of the intestinal walls due to muscular spasm. These theories have received little corroboration from the conclusions of some recent investigators, notably Wilms[22] and Lenander.[8] By careful experiments with regard to abdominal pain it has been demonstrated by Lenander that

(1) "Pains do not originate in the abdominal organs, which are supplied *only by the sympathetic fibres and the vagus nerves.*

(2) "*All pains originate in the abdominal wall,* more especially in the parietal serous membrane and subserous connective tissue structures, which are innervated by the cerebro-spinal nerves.

(3) "Stretching of the parietal mesenteric attachments of the stomach and the intestines, as well as the string or band-like adhesions to the abdominal parieties, invariably elicits pain."

Lenander was able to crush the intestines by means of powerful forceps without causing pain in patients not under general anæsthesia suffering from abdominal fistulæ. He was unable to elicit pain by electrical stimuli sufficient to cause the bowel to become white and stony hard. The idea of pain being due to intestinal anæmia or compression of the intestinal nerves seems to be disproved by these simple experiments. Lenander insists that the sympathetic and vagus nerves are not capable of responding to pain producing stimuli, and that according to his experience sensations

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of pain are transmitted only by the phrenic nerve, the lower six intercosta's, the lumbar and sacral nerves. According to these conclusions, the theories of Perutz and Buch are incorrect in that they believed the sympathetic nerves to be the seat of the trouble in "angina abdominalis." (The name given by Perutz to describe abdominal arterio-sclerotic pain.) Lenander furthermore proved that the slightest traction upon the intestines or other viscera, causing stretching of their parietal attachments, invariably produced pain, and that slight pressure upon the anterior abdominal wall causing a displacement of the serous upon its subserous layer elicits painful sensations described as "colicky," "crampy," etc.

In the light of these results, what factor in the symptom complex of abdominal arterio-sclerosis will account for the pain produced? It seems that the distention must be the direct exciting cause of the distress for the following reasons:

(1) The spastic contraction of the arteries produces anemia of the viscera supplied, which, in turn, causes a funtional paresis, with consequent distention of the bowels; this induces pressure upon the parietal peritoneum in all directions and also traction upon the mesenteric attachments, thus producing pain by stimulation of cerebro-spinal sensory nerve endings.

(2) It is a well known clinical fact that relief of the distention usually causes marked diminution of the pain.

The diagnosis of abdominal arterio-sclerotic pain is sometimes a difficult matter. Often it means the most careful exclusion of commoner causes after prolonged treatment and observation. The following factors may assist in giving the proper diganostic clue:

(1) Age. After 40 years, as a rule.

(2) History. Syphilis, gout, alcoholism, overwork, overeating. ("Venus, Bacchus and Vulcan")

(3) *Persistent arterial hypertension* as determined by accurate manometric observations. (Above 140 mm. mercury at 40-45 years; 150 mm., 50-55 years; 160 mm. at 60-70 years.—Oliver.)

(4) The presence of hardening of the peripheral vessels of the extremities, the retina, the temporals.

(5) The presence of paroxysmal abdominal pain, usually gastralgic or enteralgic in type, brought on by exertion, indigestion, emotion and the recumbent position; relief from cardio-vascular

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therapy (nitrites, strophanthus, diuretin), no relief by treatment directed to supposed disease of the gastro-enteric tract.

(6) The exclusion of gastric and duodenal ulcers, abdominal cancer, biliary and renal colic, mechanical bowel obstruction, and the pain of spinal cord disease.

(7) In the presence of persistent arterial hypertension and sclerosis of the peripheral vessels, in the absence of intrathoracic and kidney arterio-sclerosis, in persons who are in the degenerative period of life, sclerosis of the abdominal vessels may be assumed, especially in persons of a corpulent build and sedentary life. (Fraenkel and Hasenfeld.)

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DISCUSSION.

DR. N. S. BETTS: As I said in my paper this morning the study of arterio-sclerosis is practically in its infancy. I will not add anything to what has been said in the paper. I have read a good article by Brook on abdominal pain. He demonstrates that the visceral peritoneum can be burned, crushed or suffer any traumatism without pain, but that the parietal peritoneum is extremely sensitive. It is found by careful dissection that there is a system of nerves beneath the peritoneum which can account for the pain. One point in regard to sclerotic processes in the kidney, it has been found that where sclerotic changes occur in the glomeruli, the arterial blood pressure is raised in the body more so than where the tubules are involved. The highest blood pressure occurs where the convoluted tubules have been involved. Quite a number of physicians believe that in the high blood pressure of syphilitics it is not the syphilis itself but the long continued use of mercury that is accountable for this condition. There is nothing about the first case the doctor quoted that would exclude the diagnosis of gastric neurosis.

DR. —. —. ———: Concerning the phenomenon of intermittent bulging of the vessels, this is also a symptom of arterio-sclerosis. In the cases of intermittent limp spasm of the blood vessels is supposed to be the cause. The characteristic of this condition is as follows: The patient while walking finds that the power of the lower extremities has gone. This is usually accompanied by cramps in the muscles of the calves of the leg; there is also found in these cases a tender point over the course of the vessels in the calf of the leg. An interesting aspect of this is that there is an obliteration of the pulse in the dorsalis pedis artery, and at the same time there is a blanching of the skin. This shows that there has been a shutting off of the blood stream, so that below this point we can find no pulse. One of these cases actually went on to gangrene. Concerning the diagnosis of this disease a valuable aid is given by the sphygmomanometer. I think that this instrument deserves more use in general practice. The tactus eruditus of the past is a dream as has been stated, and you cannot tell whether the blood pressure is high or low by the use of the finger.

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